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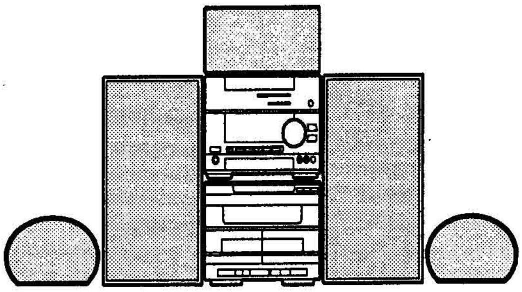
aiwa SERVICE

XR-AVH100



CD STEREO SYSTEM

- BASIC TAPE MECHANISM : 2ZM-3MK2 PR2NM
- BASIC CD MECHANISM : 4ZG-1 WRNM
- TYPE: K

SYSTEM	AMPLIFIER/ TUNER	CASSETTE DECK/ CD PLAYER	SPEAKER	REMOTE CONTROLLER
XR-AVH100	RX–NAVH100	FD–NH100	SX-NAVH100 SX-C400 SX-R230	RC–T506

- If requiring information about the CD mechanism, see service manual of 4ZG-1WR. (S/M Code No. 09-965-128-10T)
- If requiring information about the FD-NH100, see service manual of XR-H100. (S/M Code No. 09-977-207-3FE)

SERVICE MANUAL

S/M Code No. 09–977–207–4FE

SPECIFICATIONS

STEREO RECEIVER RX-NAVH100

<FM tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

<MW Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<LW Tuner section>

Tuning range	144 kHz to 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output	**Front** (without connecting to the SURROUND SPEAKERS) Rated: 100 W + 100 W (6 ohms, T.H.D. 1 %, 1 kHz) Reference: 125 W + 125 W (6 ohms, T.H.D 10 %, 1 kHz) **Rear (Surround)** Rated: 10 W + 10 W (16 ohms, T.H.D. 1 %, 1 kHz) Reference: 12.5 W + 12.5 W (16 ohms, T.H.D 10 %, 1 kHz) **Center** Rated: 20 W (8 ohms, T.H.D. 1 %, 1 kHz) Reference: 25 W (8 ohms, T.H.D 10 %, 1 kHz)
Total harmonic distortion	0.1 % (60 W, 1 kHz, 6 ohms)
Inputs	VIDEO 1/MD IN: 200 mV (adjustable) VIDEO 2/AUX IN: 200 mV (adjustable) MIC 1, MIC 2: 1 mV (10 kohms)
Outputs	REC OUT: 200 mV SUPER WOOFER: 2.4 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS: accept speakers of 16 ohms or more CENTER SPEAKERS: accept speakers of 8 ohms or more PHONES (stereo jack): accepts headphones of 32 ohms or more

<General>

Power requirements	230 V AC, switchable 50 Hz
Power consumption	180 W (System total 200 W)
Dimensions of main unit (W x H x D)	260 x 199 x 333 mm
Weight of main unit	7.5 kg

STEREO CASSETTE DECK/COMPACT DISC PLAYER FD-NH100

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	Metal tape: 50 Hz – 17000 Hz CrO_2 tape: 50 Hz – 16000 Hz Normal tape: 50 Hz –15000 Hz
Signal-to-noise ratio	70 dB (Dolby C NR ON, Metal tape peak level)
Recording system	AC bias
Heads	Deck 1: Playhead x 1 Deck 2: Recording/playback/erase head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.03% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<General>

Dimensions (W x H x D)	260 X 204 X 320.2 mm
Weight	4 kg

<SPEAKER SYSTEM SX-NAVH100>

Cabinet type	3 way, bass reflex (magnetic shielded type)
Speakers	Woofer: 160 mm cone type Tweeter: 60 mm cone type Super tweeter: 20 mm ceramic type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	250 x 396 x 250 mm
Weight	5.2 kg

- Design and specifications are subject to change without notice.
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  Under license from BBE Sound, Inc.

MODEL NO.

RX-NAVH100

ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-NT1-619-010		IC,LC866440W-5E65
	87-A20-650-010		IC,RPM6938-V11
	87-017-915-080		IC,BU4094BCF
	87-A20-056-010		IC,BA3880S
	87-A20-107-010		IC,BA3836
	87-A20-083-010		IC,BA3835S
	87-017-804-010		IC,BU4052BCP
	87-017-888-080		IC,NJM4558MD
	87-017-914-010		IC,BU4094 BCP
	87-A20-069-040		C-IC,BA3842F
	87-070-127-110		IC,LC72131 D
	87-017-714-110		IC,LA1836
	87-A20-514-010		C-IC,M62460FP
TRANSISTOR			
	87-A30-086-070		C-TR,CSD1306E
	89-213-702-010		TR,2SB1370 (1.8W)
	89-109-352-080		TR,2SA935Q
	87-026-610-080		TR,KTC3198GR
	87-A30-083-080		TR,CSD1489B
	87-A30-076-080		C-TR,2SC3052F
	87-A30-075-080		C-TR,2SA1235F
	89-324-122-080		TR,2SC2412K
	87-A30-111-080		TR,C2N5401
	87-A30-097-010		TR,FN 1016
	87-A30-098-010		TR,FP 1016
	87-A30-089-010		FET,2SK2723
	87-026-226-080		CHIP-TR,DTA143EK
	89-110-372-080		TR,2SA1037Y(140MHZ 200MW)
	87-026-211-080		TR,DTA144EK
	87-026-230-080		CHIP-TR,DTA114YK
	87-026-227-080		C-TR,DTA114EK
	87-026-235-080		CHIP-TR,DTC114EK
	87-026-229-080		TR,DTA143XK
	89-112-965-080		TR,2SA1296 (0.75W)
	87-026-228-080		TR,DTA124EK
	89-109-521-080		TR,2SA952 (0.6W)
	87-A30-047-080		TR,CSD655E
	87-A30-087-080		C-FET,2SK2158
	87-026-214-080		TR,DTA114YS (0.3W)
	89-327-143-080		TR,2SC2714 (0.1W)
	87-A30-112-080		TR,C2N5551
	89-420-612-010		TR,2SD2061 (2W)
	89-505-434-540		C-FET,2SK543(4/5)
	87-026-269-080		TR,DTA114ES
	87-026-213-080		TR,DTC114YK
DIODE			
	87-A40-116-060		DIODE,RS403L-B-D-51
	87-A40-115-060		DIODE,RS603M
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-270-080		C-DIODE,MC2838
	87-A40-269-080		C-DIODE,MC2836
	87-020-027-080		CHIP-DIODE 1SS184
	87-A40-206-080		ZENER,UZ10BSC
	87-A40-210-080		ZENER,UZ30BSD
	87-070-345-080		DIODE,IN4148
	87-A40-205-080		ZENER,UZ6.2BSC
	87-017-436-080		ZENER,UZ4.7BSA
	87-017-437-080		DIODE,IN4148M
	87-A40-274-010		DIODE,FMB-G16L
	87-A40-202-080		ZENER,UZ5.1BSB
	87-017-481-080		ZENER,UZ5.6BSB
	87-A40-186-080		ZENER,UZ5.1BSC
	87-A40-235-080		ZENER,MTZJ9.1C
MAIN C.B			
C101	87-016-520-090		CAP,E 3300-65
C102	87-016-520-090		CAP,E 3300-65
C104	87-010-235-080		CAP,E 470-16 SME
C105	87-010-235-080		CAP,E 470-16 SME
C106	87-016-285-080		CAP,E 47-100SME
C107	87-010-407-080		CAP, ELECT 33-50V
C108	87-010-407-080		CAP, ELECT 33-50V
C109	87-010-263-080		CAP, ELECT 100-10V
C112	87-010-382-080		CAP, ELECT 22-25V
C113	87-010-403-080		CAP, ELECT 3.3-50V
C116	87-012-140-080		CAP 470P
C121	87-012-368-080		C-CAP,S 0.1-50 F
C122	87-012-368-080		C-CAP,S 0.1-50 F
C123	87-012-368-080		C-CAP,S 0.1-50 F
C124	87-012-368-080		C-CAP,S 0.1-50 F
C125	87-010-264-040		CAP,E 100-10 5L
C126	87-010-189-010		CAP, CHIP S 8200P
C127	87-010-189-010		CAP, CHIP S 8200P
C152	87-010-260-080		CAP, ELECT 47-25V
C163	87-018-212-080		CAP,TC-U 0.022-50 Z F
C164	87-018-212-080		CAP,TC-U 0.022-50 Z F
C165	87-010-197-080		C-CAP,S 0.01-25 K B
C166	87-010-197-080		C-CAP,S 0.01-25 K B
C171	87-016-658-090		CAP,E 4700-35 SMG
C172	87-016-658-090		CAP,E 4700-35 SMG
C173	87-012-368-080		C-CAP,S 0.1-50 F
C174	87-012-368-080		C-CAP,S 0.1-50 F
C175	87-012-368-080		C-CAP,S 0.1-50 F
C176	87-012-368-080		C-CAP,S 0.1-50 F
C201	87-010-401-080		CAP, ELECT 1-50V
C202	87-010-401-080		CAP, ELECT 1-50V
C205	87-010-182-080		C-CAP,S 2200P-50 B
C207	87-010-404-080		CAP, ELECT 4.7-50V
C208	87-010-404-080		CAP, ELECT 4.7-50V
C209	87-010-497-040		CAP,E 4.7-35 GAS
C210	87-010-497-040		CAP,E 4.7-35 GAS
C211	87-010-184-080		CHIP CAPACITOR 3300P(K)
C212	87-010-184-080		CHIP CAPACITOR 3300P(K)
C213	87-010-260-080		CAP, ELECT 47-25V
C214	87-010-260-080		CAP, ELECT 47-25V
C215	87-010-196-080		CHIP CAPACITOR,0.1-25
C217	87-010-246-080		CAP, ELECT 47-35V
C225	87-A10-516-080		C-CAP,S 100P-200 CH
C226	87-A10-516-080		C-CAP,S 100P-200 CH
C229	87-016-461-080		C-CAP,S 0.47-16 Z F
C230	87-016-461-080		C-CAP,S 0.47-16 Z F
C233	87-010-196-080		CHIP CAPACITOR,0.1-25
C234	87-010-196-080		CHIP CAPACITOR,0.1-25
C235	87-010-196-080		CHIP CAPACITOR,0.1-25
C236	87-010-196-080		CHIP CAPACITOR,0.1-25
C401	87-010-184-080		CHIP CAPACITOR 3300P(K)
C402	87-010-184-080		CHIP CAPACITOR 3300P(K)
C403	87-010-405-080		CAP, ELECT 10-50V
C404	87-010-405-080		CAP, ELECT 10-50V
C405	87-010-260-080		CAP, ELECT 47-25V
C406	87-010-101-080		CAP, ELECT 220-16

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C407	87-010-188-080		CAP,CHIP 6800P
C408	87-010-188-080		CAP,CHIP 6800P
C409	87-018-127-080		CAP, CER 470P-50V
C410	87-018-127-080		CAP, CER 470P-50V
C411	87-010-197-080		CAP, CHIP 0.01 DM
C412	87-010-197-080		CAP, CHIP 0.01 DM
C413	87-010-195-080		C-CAP,S 0.068-25 F
C414	87-010-195-080		C-CAP,S 0.068-25 F
C415	87-010-404-080		CAP, ELECT 4.7-50V
C416	87-010-404-080		CAP, ELECT 4.7-50V
C417	87-010-404-080		CAP, ELECT 4.7-50V
C418	87-010-404-080		CAP, ELECT 4.7-50V
C419	87-010-544-080		CAP, ELECT 0.1-50V
C500	87-010-197-080		CAP, CHIP 0.01 DM
C501	87-010-183-080		C-CAP,S 2700P-50 B
C502	87-010-194-080		CAP, CHIP 0.047
C503	87-010-196-080		CHIP CAPACITOR,0.1-25
C504	87-010-263-080		CAP, ELECT 100-10V
C505	87-010-404-080		CAP, ELECT 4.7-50V
C506	87-010-404-080		CAP, ELECT 4.7-50V
C507	87-010-545-080		CAP, ELECT 0.22-50V
C509	87-010-194-080		CAP, CHIP 0.047
C510	87-010-384-080		CAP, ELECT 100-25V
C511	87-010-404-080		CAP, ELECT 4.7-50V
C512	87-010-404-080		CAP, ELECT 4.7-50V
C542	87-018-209-080		CAP,TC-U 0.1-50 Z F
C600	87-010-405-080		CAP, ELECT 10-50V
C601	87-010-213-080		C-CAP,S 0.015-50 B
C602	87-010-213-080		C-CAP,S 0.015-50 B
C605	87-010-544-080		CAP, ELECT 0.1-50V
C606	87-010-544-080		CAP, ELECT 0.1-50V
C607	87-010-196-080		CHIP CAPACITOR,0.1-25
C608	87-010-196-080		CHIP CAPACITOR,0.1-25
C620	87-010-318-080		C-CAP,S 47P-50 CH
C621	87-010-318-080		C-CAP,S 47P-50 CH
C622	87-010-318-080		C-CAP,S 47P-50 CH
C633	87-012-142-080		CAP, S 0.33-16
C634	87-010-196-080		CHIP CAPACITOR,0.1-25
C635	87-018-209-080		CAP, CER 0.1-50V
C636	87-010-196-080		CHIP CAPACITOR,0.1-25
C701	87-010-381-080		CAP, ELECT 330-16V
C702	87-010-404-080		CAP, ELECT 4.7-50V
C703	87-010-197-080		CAP, CHIP 0.01 DM
C704	87-010-197-080		CAP, CHIP 0.01 DM
C711	87-010-263-080		CAP, ELECT 100-10V
C712	87-010-196-080		CHIP CAPACITOR,0.1-25
C715	87-010-197-080		CAP, CHIP 0.01 DM
C716	87-010-197-080		CAP, CHIP 0.01 DM
C722	87-010-152-080		C-CAP,S 8P-50 CH
C723	87-010-178-080		CHIP CAP 1000P
C725	87-010-178-080		CHIP CAP 1000P
C727	87-010-196-080		CHIP CAPACITOR,0.1-25
C728	87-010-248-080		CAP, ELECT 220-10V
C760	87-010-197-080		CAP, CHIP 0.01 DM
C761	87-010-196-080		CHIP CAPACITOR,0.1-25
C770	87-010-405-080		CAP, ELECT 10-50V
C771	87-010-405-080		CAP, ELECT 10-50V
C772	87-010-194-080		CAP, CHIP 0.047
C773	87-010-196-080		CHIP CAPACITOR,0.1-25
C774	87-010-248-080		CAP, ELECT 220-10V
C775	87-010-405-080		CAP, ELECT 10-50V
C776	87-010-197-080		CAP, CHIP 0.01 DM
C777	87-010-400-080		CAP, ELECT 0.47-50V
C778	87-010-401-080		CAP, ELECT 1-50V
C779	87-010-401-080		CAP, ELECT 1-50V
C780	87-010-197-080		CAP, CHIP 0.01 DM
C781	87-010-405-080		CAP, ELECT 10-50V
C782	87-010-405-080		CAP, ELECT 10-50V
C787	87-010-184-080		CHIP CAPACITOR 3300P(K)
C788	87-010-184-080		CHIP CAPACITOR 3300P(K)

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C789	87-010-179-080		CAP,CHIP S B1200P
C790	87-010-179-080		CAP,CHIP S B1200P
C791	87-010-401-080		CAP, ELECT 1-50V
C792	87-010-182-080		C-CAP,S 2200P-50 K B
C793	87-010-189-080		C-CAP,S 8200P-50 B
C794	87-010-408-080		CAP, ELECT 47-50V
C795	87-010-194-080		CAP, CHIP 0.047
C796	87-010-403-080		CAP, ELECT 3.3-50V
C806	87-018-134-080		CAPACITOR,TC-U 0.01-16
C814	87-010-197-080		CAP, CHIP 0.01 DM
C815	87-018-134-080		CAPACITOR,TC-U 0.01-16
C816	87-018-134-080		CAPACITOR,TC-U 0.01-16
C817	87-010-197-080		CAP, CHIP 0.01 DM
C818	87-010-197-080		CAP, CHIP 0.01 DM
C819	87-010-197-080		CAP, CHIP 0.01 DM
C820	87-010-408-080		CAP, ELECT 47-50V
C821	87-010-197-080		CAP, CHIP 0.01 DM
C822	87-010-197-080		CAP, CHIP 0.01 DM
C823	87-010-197-080		CAP, CHIP 0.01 DM
C828	87-010-196-080		CHIP CAPACITOR,0.1-25
C829	87-010-196-080		CHIP CAPACITOR,0.1-25
C940	87-010-197-080		CAP, CHIP 0.01 DM
C942	87-010-150-080		C-CAP,S 6P-50 D C H
C946	87-010-401-080		CAP, ELECT 1-50V
C949	87-014-049-080		CAP,PP 470P-100 J
C952	87-010-197-080		C-CAP,S 0.01-25 K B
C957	87-010-315-080		C-CAP,S 27P-50 C H
C958	87-010-197-080		C-CAP,S 0.01-25 K B
C960	87-010-196-080		CHIP CAPACITOR,0.1-25
CF801	87-008-423-080		FILTER, SFE10.7MS3GH-A-TF21
CF802	82-785-747-080		CF,MS2 GHY,R
FB143	87-008-372-080		FILTER, EMI BL OIRNI
FFE801	A8-6ZA-191-030		6ZA-1 FEENM
J252	87-A60-031-010		JACK,6.3 BLK ST W/S
J253	87-099-801-010		JACK,PIN 1P BLK
J254	87-033-240-010		TERMINAL,4P HSP-324V1-05
J801	87-033-241-010		TERMINAL,ANT 2P AJ-2039
L201	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
L701	87-003-293-010		COIL, TRAP MPX
L702	87-003-293-010		COIL, TRAP MPX
L741	87-A50-015-010		COIL,FM DET(TOK)
L742	87-A90-051-010		FLTR,CFAZ-450(TOK)
L770	87-003-143-080		COIL 4.7 UH
L832	87-003-098-080		COIL,2.2UH
L941	87-A50-020-010		COIL,ANT LW (COI) 252KHZ
L942	87-A50-019-010		COIL,OSC LW (COI) 856KHZ
L981	86-NF4-665-010		AM PACK 1(TOK)
LED321	87-070-281-080		LED,SLZ736A-25-S-T1
LED322	87-070-281-080		LED,SLZ736A-25-S-T1
LED323	87-070-281-080		LED,SLZ736A-25-S-T1
LED324	87-070-281-080		LED,SLZ736A-25-S-T1
LED325	87-070-281-080		LED,SLZ736A-25-S-T1
LED331	87-070-281-080		LED,SLZ736A-25-S-T1
LED332	87-070-281-080		LED,SLZ736A-25-S-T1
LED333	87-070-281-080		LED,SLZ736A-25-S-T1
LED334	87-070-281-080		LED,SLZ736A-25-S-T1
LED335	87-070-281-080		LED,SLZ736A-25-S-T1
⚠ PR201	87-A90-195-080		PROTECTOR 7A 125V 491
⚠ PR202	87-A90-195-080		PROTECTOR 7A 125 V 491
R117	87-022-394-080		RES,NF 0.47-1/4WJ
R229	87-A00-258-080		RES,M/F 0.22-1W J
R230	87-A00-258-080		RES,M/F 0.22-1W J
R231	87-A00-258-080		RES,M/F 0.22-1W J
R232	87-A00-258-080		RES,M/F 0.22-1W J
RY101	87-A90-464-010		RELAY, DG12D2-O(M)
SFR722	87-024-432-080		SFR,4.7K RH063EC
TC701	87-011-221-080		CAP, TRIMMER 30P
TC942	87-011-221-080		CAP, TRIMMER 30P

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
TH201	87-A90-221-080		C-THMS 100K
TH202	87-A90-221-080		C-THMS 100K
W101	85-NF5-628-010		F-CABLE 7P-2.5
W304	87-NT1-650-010		CORD,FG15P
X703	84-508-618-010		VIBRATER CSB456 F15
X721	87-030-372-010		VIB,XTAL 7.2MHZ

FRONT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C201	87-010-555-040		CAP,E 100-10 GAS
C202	87-010-497-040		CAP,E 4.7-35 GAS
C203	87-010-494-040		CAP,E 1-50 GAS
C204	87-A10-189-040		CAP,E 220-10
C205	87-010-196-080		CHIP CAPACITOR,0.1-25
C206	87-010-196-080		CHIP CAPACITOR,0.1-25
C215	87-010-405-040		CAP,E 10-50
C216	87-010-405-040		CAP,E 10-50
C217	87-010-408-040		CAP,E 47-50 SME
C221	87-010-312-080		C-CAP,S 15P-50 CH
C222	87-010-180-080		C-CER 1500P
C223	87-010-498-040		CAP,E 10-16 GAS
C224	87-012-145-080		CAP, CHIP S 270P CH
C225	87-010-498-040		CAP,E 10-16 GAS
C301	87-010-196-080		CHIP CAPACITOR,0.1-25
C302	87-010-196-080		CHIP CAPACITOR,0.1-25
C303	87-010-196-080		CHIP CAPACITOR,0.1-25
C350	87-010-112-040		CAP,E 100-16
C370	87-010-112-040		CAP,E 100-16
C501	87-010-322-080		C-CAP,S 100P-50 CH
C502	87-010-196-080		CHIP CAPACITOR,0.1-25
C503	87-010-196-080		CHIP CAPACITOR,0.1-25
C504	87-010-196-080		CHIP CAPACITOR,0.1-25
C505	87-010-196-080		CHIP CAPACITOR,0.1-25
C506	87-010-196-080		CHIP CAPACITOR,0.1-25
C601	87-010-196-080		CHIP CAPACITOR,0.1-25
C602	87-010-545-040		CAP,E 0.22-50 SME
C603	87-010-321-080		CHIP CAPACITOR,82P(J)
C604	87-010-196-080		CHIP CAPACITOR,0.1-25
C605	87-010-196-080		CHIP CAPACITOR,0.1-25
C608	87-010-177-080		C-CAP,S 820P-50 SL
C609	87-016-251-040		CAP,E 220-16 SMG
C610	87-010-405-040		CAP,E 10-50
C611	87-010-405-040		CAP,E 10-50
C612	87-010-406-040		CAP,E 22-50 SME
C613	87-010-401-040		CAP,E 1-50 SME
C615	87-010-186-080		CAP,CHIP 4700P
C618	87-018-209-080		CAP, CER 0.1-50V
C701	87-010-401-040		CAP,E 1-50 SME
C702	87-010-401-040		CAP,E 1-50 SME
C703	87-010-182-080		C-CAP,S 2200P-50 B
C704	87-010-182-080		C-CAP,S 2200P-50 B
C705	87-010-545-040		CAP,E 0.22-50 SME
C706	87-010-545-040		CAP,E 0.22-50 SME
C707	87-010-993-080		C-CAP,S 0.056-25 B
C708	87-010-993-080		C-CAP,S 0.056-25 B
C709	87-012-393-080		C-CAP,S 0.22-16 R K
C710	87-012-393-080		C-CAP,S 0.22-16 R K
C711	87-010-401-040		CAP,E 1-50 SME
C712	87-010-260-040		CAP,E 47-25 SME
C713	87-010-405-040		CAP,E 10-50
C714	87-010-552-040		CAP,E 22-16 GAS
C715	87-016-669-080		C-CAP,S 0.1-25 K B
EMI201	87-008-372-080		FLTR,EMIBL01
FB601	87-008-474-080		F-BEAD,BL02RN1-R62T
FC001	88-904-201-210		FF-CABLE 4P 1.25
FL201	86-NT1-636-010		FL,BJ451GK
J601	87-A60-284-010		JACK,3.5MO (MSC)
J602	87-A60-284-010		JACK,3.5MO (MSC)
L202	87-005-151-080		COIL,2.2UH

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
L220	87-A50-052-010		COIL,CLOCK 5.76MHZ T1
L221	87-003-152-080		COIL, 100UH
LED301	87-A40-316-080		LED,SLR-56PCT31 GRN
LED302	87-A40-316-080		LED,SLR-56PCT31 GRN
LED303	87-A40-316-080		LED,SLR-56PCT31 GRN
LED304	87-A40-316-080		LED,SLR-56PCT31 GRN
LED305	87-A40-316-080		LED,SLR-56PCT31 GRN
LED306	87-A40-316-080		LED,SLR-56PCT31 GRN
LED307	87-A40-316-080		LED,SLR-56PCT31 GRN
LED308	87-A40-316-080		LED,SLR-56PCT31 GRN
LED309	87-A40-316-080		LED,SLR-56PCT31 GRN
LED310	87-A40-316-080		LED,SLR-56PCT31 GRN
LED311	87-A40-317-080		LED,SLR-342VCT31 RED
LED312	87-A40-317-080		LED,SLR-342VCT31 RED
LED313	87-A40-317-080		LED,SLR-342VCT31 RED
LED314	87-A40-317-080		LED,SLR-342VCT31 RED
LED315	87-A40-317-080		LED,SLR-342VCT31 RED
LED336	87-A40-363-080		LED,SLH-56PCTB7 GRN
LED337	87-A40-363-080		LED,SLH-56PCTB7 GRN
LED338	87-A40-268-080		LED,SLH-56DCT31 ORN
LED339	87-A40-268-080		LED,SLH-56DCT31 ORN
LED340	87-A40-268-080		LED,SLH-56DCT31 ORN
LED341	87-A40-268-080		LED,SLH-56DCT31 ORN
LED342	87-A40-268-080		LED,SLH-56DCT31 ORN
LED343	87-A40-268-080		LED,SLH-56DCT31 ORN
S133	87-A90-095-080		SW,TACT EVQ11G04M
S134	87-A90-095-080		SW,TACT EVQ11G04M
S135	87-A90-095-080		SW,TACT EVQ11G04M
S145	87-A90-095-080		SW,TACT EVQ11G04M
S146	87-A90-095-080		SW,TACT EVQ11G04M
S147	87-A90-095-080		SW,TACT EVQ11G04M
S148	87-A90-095-080		SW,TACT EVQ11G04M
S149	87-A90-095-080		SW,TACT EVQ11G04M
S150	87-A90-095-080		SW,TACT EVQ11G04M
S151	87-A90-095-080		SW,TACT EVQ11G04M
S152	87-A90-095-080		SW,TACT EVQ11G04M
S153	87-A90-095-080		SW,TACT EVQ11G04M
S154	87-A90-095-080		SW,TACT EVQ11G04M
S155	87-A90-095-080		SW,TACT EVQ11G04M
VR601	87-A90-124-010		VR,RTRY 10KA L20
VR701	86-NT1-634-010		VR,RTRY 100KW-L20

MVR C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C616	87-010-545-040		CAP,E 0.22-50 SME
C617	87-010-545-040		CAP,E 0.22-50 SME
C637	87-010-405-040		CAP,E 10-50
C638	87-010-405-040		CAP,E 10-50
C751	87-010-402-040		CAP,E 2.2-50 SME
C752	87-010-402-040		CAP,E 2.2-50 SME
C753	87-010-404-040		CAP,E 4.7-50 SME
C754	87-010-404-040		CAP,E 4.7-50 SME
C755	87-010-260-040		CAP,E 47-25
C756	87-010-196-080		CHIP CAPACITOR,0.1-25
C757	87-010-384-040		CAP,E 100-25 SME
C803	87-010-405-040		CAP,E 10-50
C804	87-010-405-040		CAP,E 10-50
C805	87-010-260-040		CAP,E 47-25 SME
C806	87-016-081-080		C-CAP,S 0.1-16 RK
C807	87-010-401-040		CAP,E 1-50 SME
C808	87-010-318-080		C-CAP,S 47P-50 CH
C809	87-010-318-080		C-CAP,S 47P-50 CH
C810	87-012-368-080		C-CAP,S 0.1-50 F
C811	87-010-263-040		CAP,E 100-10
C812	87-010-406-040		CAP,E 22-50 SME
C822	87-016-081-080		C-CAP,S 0.1-16 RK
C823	87-016-081-080		C-CAP,S 0.1-16 RK
C824	87-016-081-080		C-CAP,S 0.1-16 RK
C825	87-012-140-080		CAP 470P

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C827	87-010-401-040		CAP,E 1-50 SME
C828	87-010-177-080		C-CAP,S 820P-50 SL
C831	87-A10-229-080		C-CAP,S 0.68-10 K W5
C832	87-012-393-080		C-CAP,S 0.22-16 R K
C833	87-012-393-080		C-CAP,S 0.22-16 R K
C834	87-010-404-040		CAP,E 4.7-50 SME
C835	87-010-404-040		CAP,E 4.7-50 SME
C836	87-012-393-080		C-CAP,S 0.22-16 R K
C837	87-012-393-080		C-CAP,S 0.22-16 R K
C838	87-016-081-080		C-CAP,S 0.1-16 RK
C841	87-016-081-080		C-CAP,S 0.1-16 RK
C842	87-016-081-080		C-CAP,S 0.1-16 RK
C845	87-016-081-080		C-CAP,S 0.1-16 RK
C847	87-010-176-080		C-CAP,S 680P-50 SL
C849	87-010-176-080		C-CAP,S 680P-50 SL
C852	87-016-456-040		CAP,E 22-16 LLA
C853	87-016-251-040		CAP,E 220-16 SMG
C854	87-016-471-040		CAP,E 10-50 K SME
C856	87-010-384-040		CAP,E 100-25 SME
C857	87-012-368-080		C-CAP,S 0.1-50 F
C861	87-010-400-040		CAP,E 0.47-50 SME
C862	87-010-400-040		CAP,E 0.47-50 SME
C863	87-010-400-040		CAP,E 0.47-50
C864	87-010-400-040		CAP,E 0.47-50
C865	87-012-368-080		C-CAP,S 0.1-50 F
C866	87-010-322-080		C-CAP,S 100P-50 CH
C867	87-010-322-080		C-CAP,S 100P-50 CH
C868	87-010-322-080		C-CAP,S 100P-50 CH
C871	87-010-182-080		C-CAP,S 2200P-50 KB
C872	87-018-208-080		CAP 0.047-50F
FC002	88-907-101-110		FF-CABLE, 7P 1.25
L801	87-005-481-080		COIL,47UH J FLR50
R827	87-025-407-080		RES,100K-1/8W
VR751	86-NT1-632-010		VR,50KBX4-L20

TRAY C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S120	87-A90-095-080		SW,TACT EVQ11G04M
S121	87-A90-095-080		SW,TACT EVQ11G04M
S122	87-A90-095-080		SW,TACT EVQ11G04M
S123	87-A90-095-080		SW,TACT EVQ11G04M
S124	87-A90-095-080		SW,TACT EVQ11G04M
S125	87-A90-095-080		SW,TACT EVQ11G04M
S126	87-A90-095-080		SW,TACT EVQ11G04M
S127	87-A90-095-080		SW,TACT EVQ11G04M
S128	87-A90-095-080		SW,TACT EVQ11G04M
S129	87-036-110-010		PUSH SWITCH
S136	87-A90-095-080		SW,TACT EVQ11G04M
S137	87-A90-095-080		SW,TACT EVQ11G04M
S138	87-A90-095-080		SW,TACT EVQ11G04M
S139	87-A90-095-080		SW,TACT EVQ11G04M
S140	87-A90-095-080		SW,TACT EVQ11G04M
S141	87-A90-095-080		SW,TACT EVQ11G04M
S144	87-036-110-010		PUSH SWITCH

R-AMP C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C901	87-012-368-080		C-CAP,S 0.1-50 F
C902	87-012-368-080		C-CAP,S 0.1-50 F
C903	87-010-398-090		CAP,E 2200-35V
C904	87-010-398-090		CAP,E 2200-35V
C906	87-012-140-080		CAP 470P
C908	87-010-246-040		CAP,E 47-35 SME
C909	87-012-140-080		CAP 470P
C911	87-012-140-080		CAP 470P
C912	87-010-196-080		CHIP CAPACITOR,0.1-25
C913	87-012-141-080		C-CAP,S 0.22-16 Z F
C920	87-010-402-040		CAP,E 2.2-50 SME
C921	87-010-180-080		C-CER 1500P
C922	87-010-406-040		CAP,E 22-50 SME
C923	87-012-140-080		CAP 470P
C924	87-010-260-040		CAP,E 47-25 SME
C925	87-010-993-080		C-CAP,S 0.056-25 B
C926	87-010-196-080		CHIP CAPACITOR,0.1-25
C927	87-010-197-080		CAP, CHIP 0.01 DM
C928	87-010-196-080		CHIP CAPACITOR,0.1-25
C934	87-010-154-080		CAP CHIP 10P
C943	87-012-140-080		CAP 470P
C949	87-010-154-080		CAP CHIP 10P
C950	87-010-180-080		C-CER 1500P
C951	87-010-402-040		CAP,E 2.2-50 SME
C952	87-010-406-040		CAP,E 22-50 SME
C954	87-010-260-040		CAP,E 47-25 SME
C956	87-010-993-080		C-CAP,S 0.056-25 B
C957	87-010-196-080		CHIP CAPACITOR,0.1-25
C958	87-010-197-080		CAP, CHIP 0.01 DM
C959	87-010-196-080		CHIP CAPACITOR,0.1-25
C960	87-010-387-040		CAP,E 470-25 M SME
C963	87-010-194-080		CAP, CHIP 0.047
J901	87-A60-351-010		JACK,PIN 3P O/W/R HSP-253V17
L901	87-003-383-010		COIL,1UH-S
L903	87-003-383-010		COIL,1UH-S
R942	87-022-663-080		RES,M/F 0.1-1W J
R988	87-022-663-080		RES,M/F 0.1-1W J

AC2 C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠ PR101	87-026-682-080		PROTECTOR,10A 60V 491
⚠ PR102	87-026-682-080		PROTECTOR,10A 60V 491
⚠ PR103	87-026-681-080		PROTECTOR,5A 60V 491
⚠ PR104	87-026-681-080		PROTECTOR,5A 60V 491
⚠ PR105	87-026-682-080		PROTECTOR,10A 60V491
⚠ PR106	87-026-682-080		PROTECTOR,10A 60V491

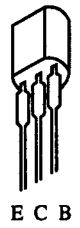
AC1 C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠ F101	87-035-191-010		FUSE,3.15A 250V T218
⚠ FC001	87-033-213-080		CLAMP, FUSE
⚠ FC002	87-033-213-080		CLAMP, FUSE
⚠ PT103	86-NT1-628-010		PT,6NT1 PR-E
⚠ T001	87-A60-317-010		TERMINAL, 1P MSC
⚠ T002	87-A60-317-010		TERMINAL, 1P MSC

MOTOR C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C210	87-010-263-040		CAP,E 100-10
C211	87-010-263-040		CAP,E 100-10
M107	87-045-383-010		MOT,M9I50T28-2

TRANSISTOR ILLUSTRATION



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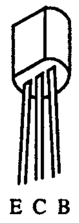

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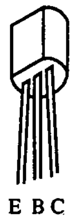

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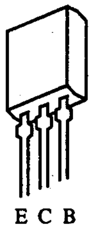

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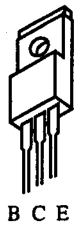

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FN1016
FP1016
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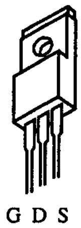

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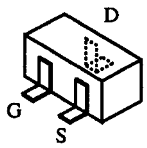

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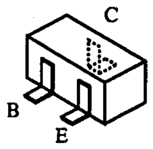

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2SC2714	DTA114YK
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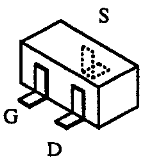
DTA143EK	DTA114EK
2SA1037	DTC114YK



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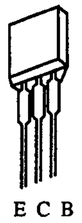
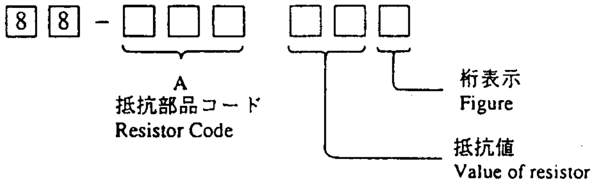


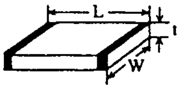
DTA114YS
DTA114ES

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

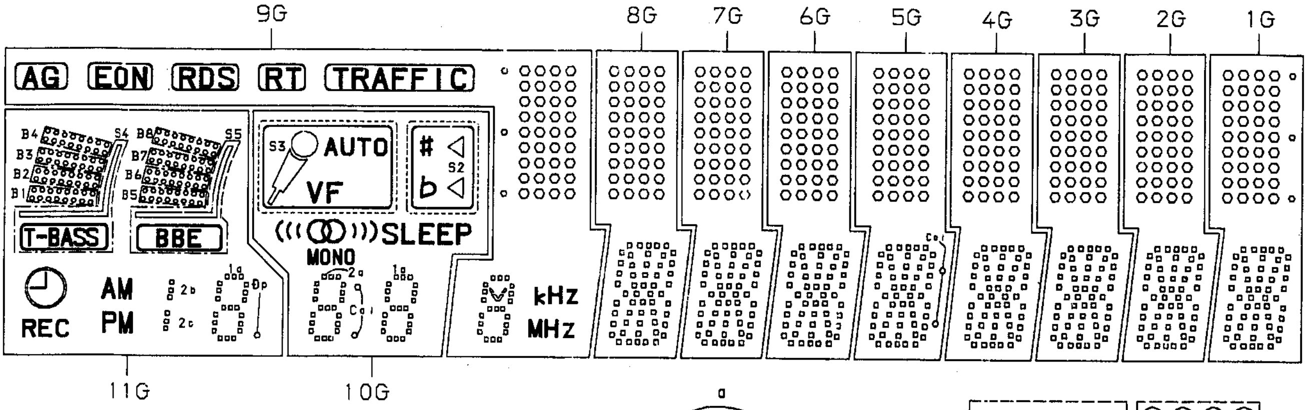

8 8 -
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

チップ抵抗
Chip resistor

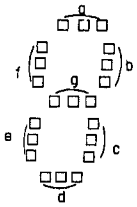
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード :A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

FL (BJ451GK) GRID ASSIGNMENT AND ANODE CONNECTION

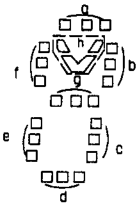
GRID ASSIGNMENT



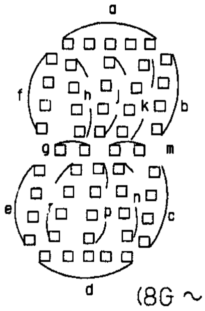
9G
8G
7G
6G
5G
4G
3G
2G
1G
AG
EON
RDS
RT
TRAFFIC
B4
B3
B2
B1
S4
B8
B7
B6
B5
S5
S3
AUTO
VF
#
S2
b
T-BASS
BBE
SLEEP
MONO
AM
PM
REC
2b
2c
1a
Dp
2a
1a
Col
kHz
MHz
Col
11G
10G



(11G, 10G)

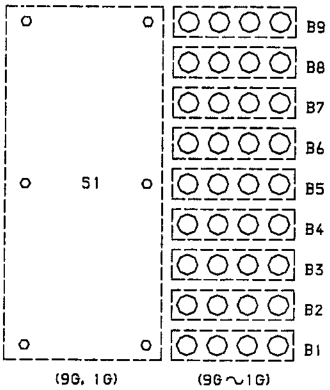


(9G)



a
f
h
j
k
b
g
m
e
r
p
n
c
d

(8G ~ 1G)



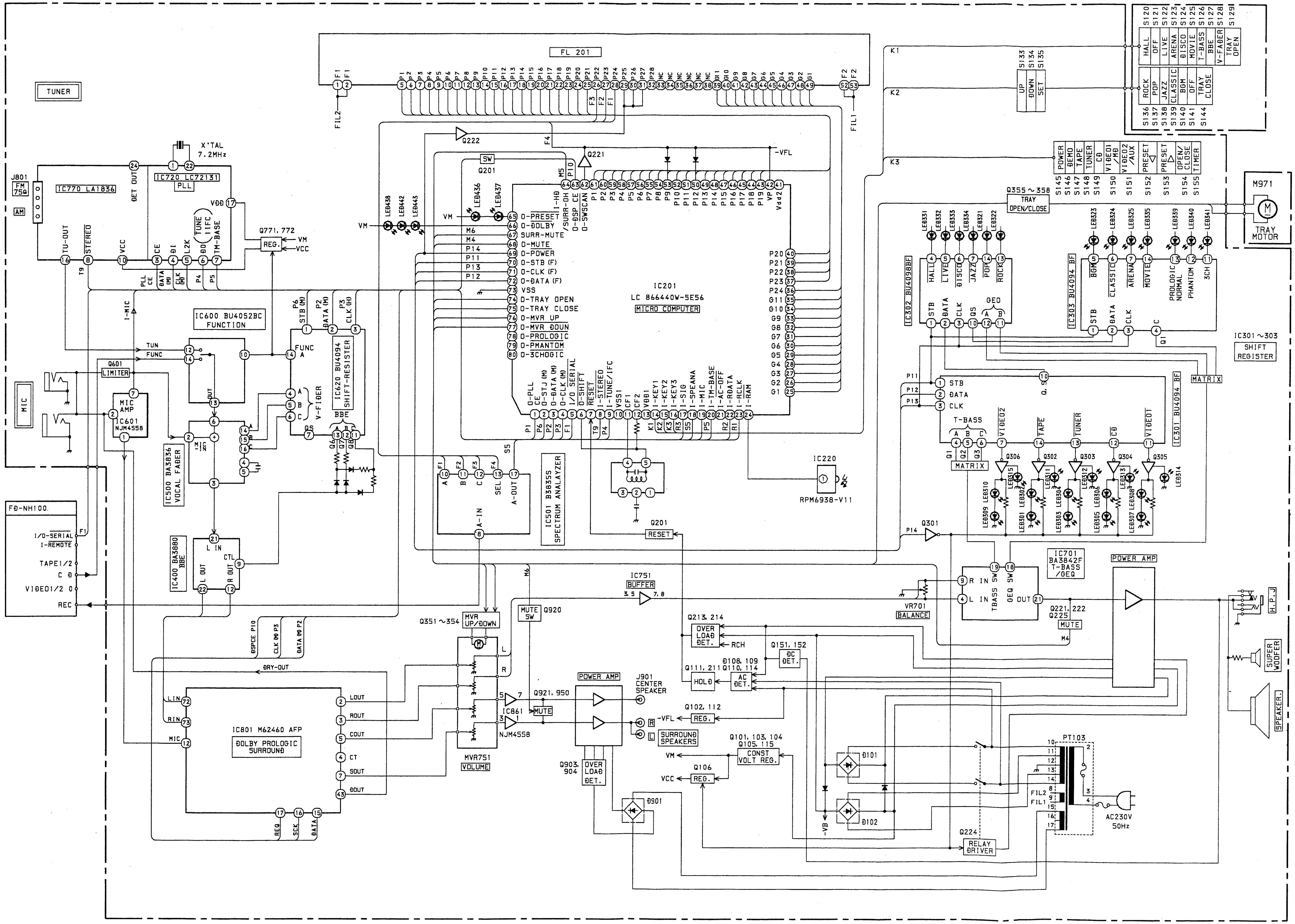
S1
B9
B8
B7
B6
B5
B4
B3
B2
B1

(9G, 1G) (9G~1G)

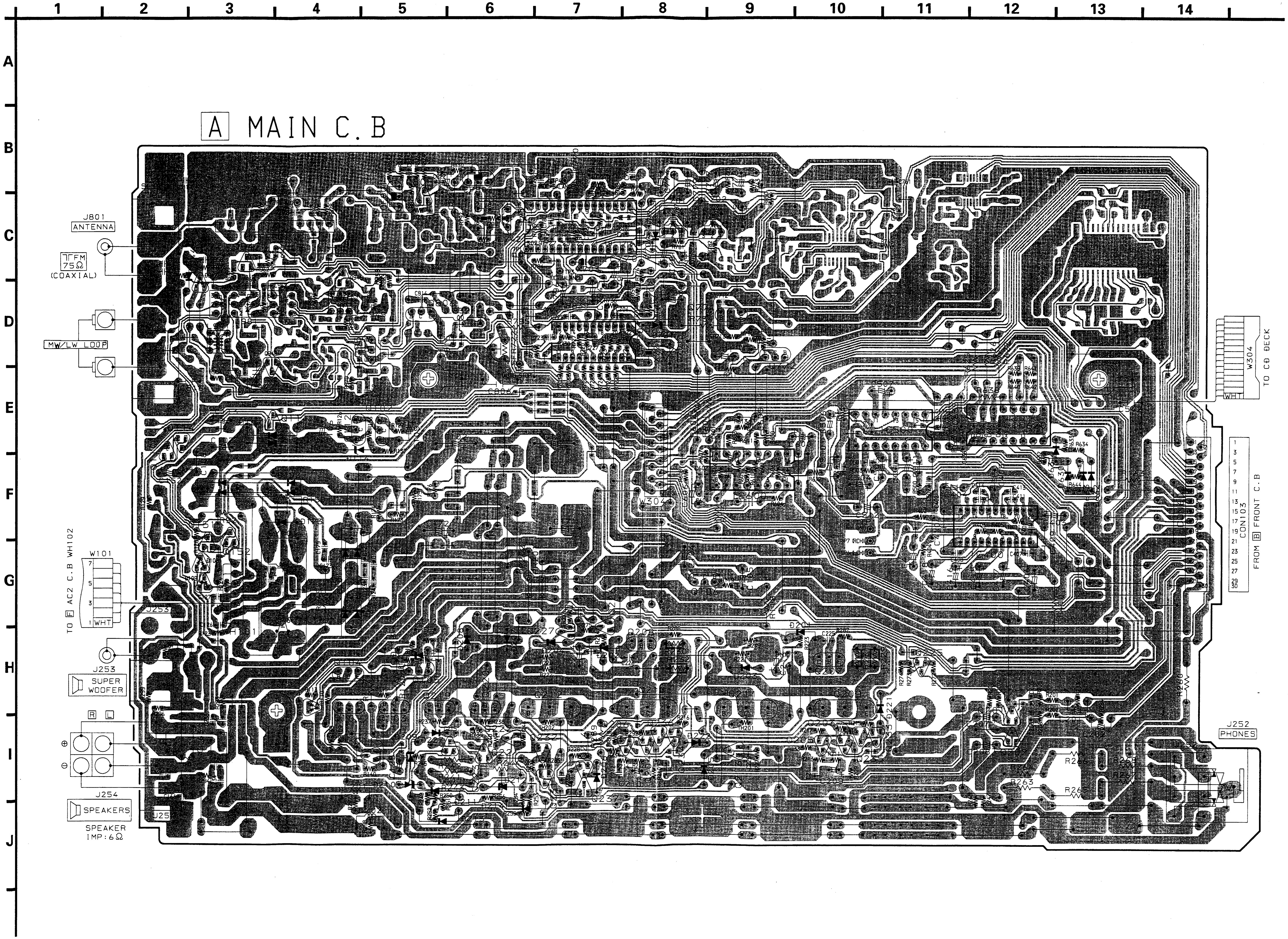
ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	2b, 2c	S3	B9	B9	B9	B9	B9	B9	B9	B9	B9
P2	1a	**AUTO**	B8	B8	B8	B8	B8	B8	B8	B8	B8
P3	1b	◁(High)	B7	B7	B7	B7	B7	B7	B7	B7	B7
P4	1f	◁ (Low)	B6	B6	B6	B6	B6	B6	B6	B6	B6
P5	1g	**(((ↀ)))**	B5	B5	B5	B5	B5	B5	B5	B5	B5
P6	1c	**SLEEP**	B4	B4	B4	B4	B4	B4	B4	B4	B4
P7	1e	**MONO**	B3	B3	B3	B3	B3	B3	B3	B3	B3
P8	1d	⬡	B2	B2	B2	B2	B2	B2	B2	B2	B2
P9	–	2a	B1	B1	B1	B1	B1	B1	B1	B1	B1
P10	–	2b	**TRAFFIC**	a	a	a	a	a	a	a	a
P11	B8	2f	**R T**	h	h	h	h	h	h	h	h
P12	B7	2g	**RDS**	j	j	j	j	j	j	j	j
P13	B6	2c	**EON**	k	k	k	k	k	k	k	k
P14	B5	2e	**A G**	b	b	b	b	b	b	b	b
P15	B4	2d	h	f	f	f	f	f	f	f	f
P16	B3	1a	a	m	m	m	m	m	m	m	m
P17	B2	1b	b	g	g	g	g	g	g	g	g
P18	B1	1f	f	c	c	c	c	c	c	c	c
P19	**AM**	1g	g	e	e	e	e	e	e	e	e
P20	**PM**	1c	c	r	r	r	r	r	r	r	r
P21	◷	1e	e	p	p	p	p	p	p	p	p
P22	**REC**	1d	d	n	n	n	n	n	n	n	n
P23	–	Col (Low)	**KHz**	d	d	d	d	d	d	d	d
P24	Đp	Col (High)	**MHz**	–	–	–	col	–	–	–	–
P25	–	–	S1	–	–	–	–	–	–	–	S1
P26	S4	–	–	–	–	–	–	–	–	–	–
P27	S5	–	–	–	–	–	–	–	–	–	–
P28	–	S2	–	–	–	–	–	–	–	–	–

BLOCK DIAGRAM


TUNER
J801
FM 75Ω
AM
IC770 LA1836
IC720 LC72131
PLL
X'TAL 7.2MHz
Q771, 772
REG.
FL 201
IC201
LC 866440W-5E56
MICRO COMPUTER
Q222
Q221
Q201
SW
-VFL
IC600 BU4052BC
FUNCTION
IC620 BU4094
SHIFT-RESISTER
V-FIDER
BBE
Q601
LIMITER
MIC AMP
IC601 NJM4558
MIC
IC500 BA3834
VOCAL FADER
IC400 BA3880
BBE
IC501 BA3835S
SPECTRUM ANALYZER
FD-NH100
I/O-SERIAL
I-REMOTE
TAPE1/2
CD
VIDEO1/2
REC
IC801 M62460 AFP
DOLBY PROLOGIC SURROUND
DRY-OUT
LOUT
ROUT
COUT
CT
SOUT
DOUT
Q351 ~354
MVR UP/DOWN
MVR751
VOLUME
MUTE SW
Q920
IC861
NJM4558
Q921, 950
MUTE
POWER AMP
J901 CENTER SPEAKER
SURROUND SPEAKERS
Q903, 904
OVER LOAD DET.
D901
IC751
BUFFER
IC220
RPM6938-V11
Q201
RESET
Q213, 214
OVER LOAD DET.
RCH
Q111, 211
HOLD
D108, 109
Q110, 114
AC DET.
Q151, 152
DC DET.
Q102, 112
REG.
Q101, 103, 104
Q105, 115
CONST VOLT REG.
Q106
REG.
VM
VCC
-VB
D101
D102
Q224
RELAY DRIVER
PT103
AC230V 50Hz
VR701
BALANCE
IC701
BA3842F
T-BASS /GEQ
Q221, 222
Q225
MUTE
POWER AMP
H.P. J
SUPER WOOFER
SPEAKER
IC302 BU4094BF
IC303 BU4094 BF
IC301 BU4094 BF
IC301~303
SHIFT REGISTER
MATRIX
T-BASS
Q301
Q306
Q302
Q303
Q304
Q305
Q355 ~ 358
TRAY OPEN/CLOSE
M971
TRAY MOTOR
S120 HALL
S121 OFF
S122 LIVE
S123 ARENA
S124 DISCO
S125 MOVIE
S126 T-BASS
S127 BBE
S128 V-FADER
S129 TRAY OPEN
S136 ROCK
S137 POP
S138 JAZZ
S139 CLASSIC
S140 BGM
S141 OFF
S144 TRAY CLOSE
S133 UP
S134 DOWN
S135 SET
S145 POWER
S146 DEMO
S147 TAPE
S148 TUNER
S149 CD
S150 VIDEO1 /MD
S151 VIDEO2 /AUX
S152 PRESET ▽
S153 PRESET △
S154 OPEN/ CLOSE
S155 TIMER
K1
K2
K3
FIL1
FIL2

WIRING – 1 (MAIN)


1
2
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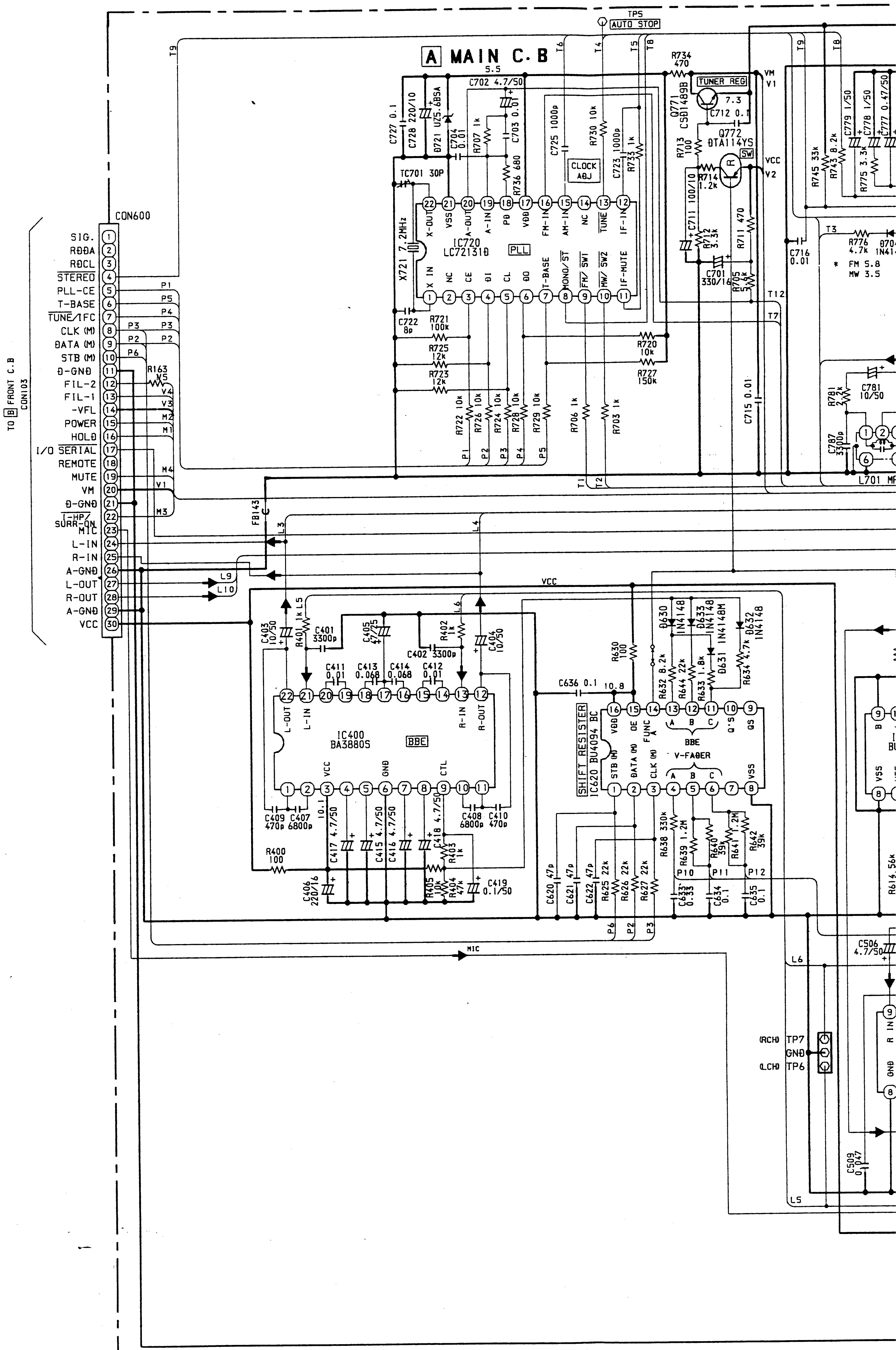
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
J801
ANTENNA
FM
75Ω
(COAXIAL)
MW/LW LOOP
TO F AC2 C.B WH102
W101
1
3
5
7
WHT
J253
SUPER WOOFER
R
L
⊕
⊖
J254
SPEAKERS
SPEAKER IMP:6Ω
J252
PHONES
W304
TO CD DECK
WHT
CON103
FROM B FRONT C.B
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
30
W304
R260
R263

SCHEMATIC DIAGRAM – 1 (MAIN)


A MAIN C.B
TP5 AUTO STOP
CON600
TO B FRONT C.B CON103
SIG.
RDDA
RDCL
STEREO
PLL-CE
T-BASE
TUNE/IFC
CLK (M)
DATA (M)
STB (M)
D-GND
FIL-2
FIL-1
-VFL
POWER
HOLD
I/O SERIAL
REMOTE
MUTE
VM
D-GND
I-HP/SURR-ON
MIC
L-IN
R-IN
A-GND
L-OUT
R-OUT
A-GND
VCC
IC720 LC72131D
PLL
X721 7.2MHz
TC701 30P
CLOCK ADJ
TUNER REG
Q771 C5D1489B
Q772 DTA114YS
SW
IC400 BA3880S
BBE
L-OUT
L-IN
R-IN
R-OUT
SHIFT RESISTER
IC620 BU4094 BC
V-FADER
FB143
L701
(RCH) TP7
GND
(LCH) TP6
* FM 5.8
MW 3.5

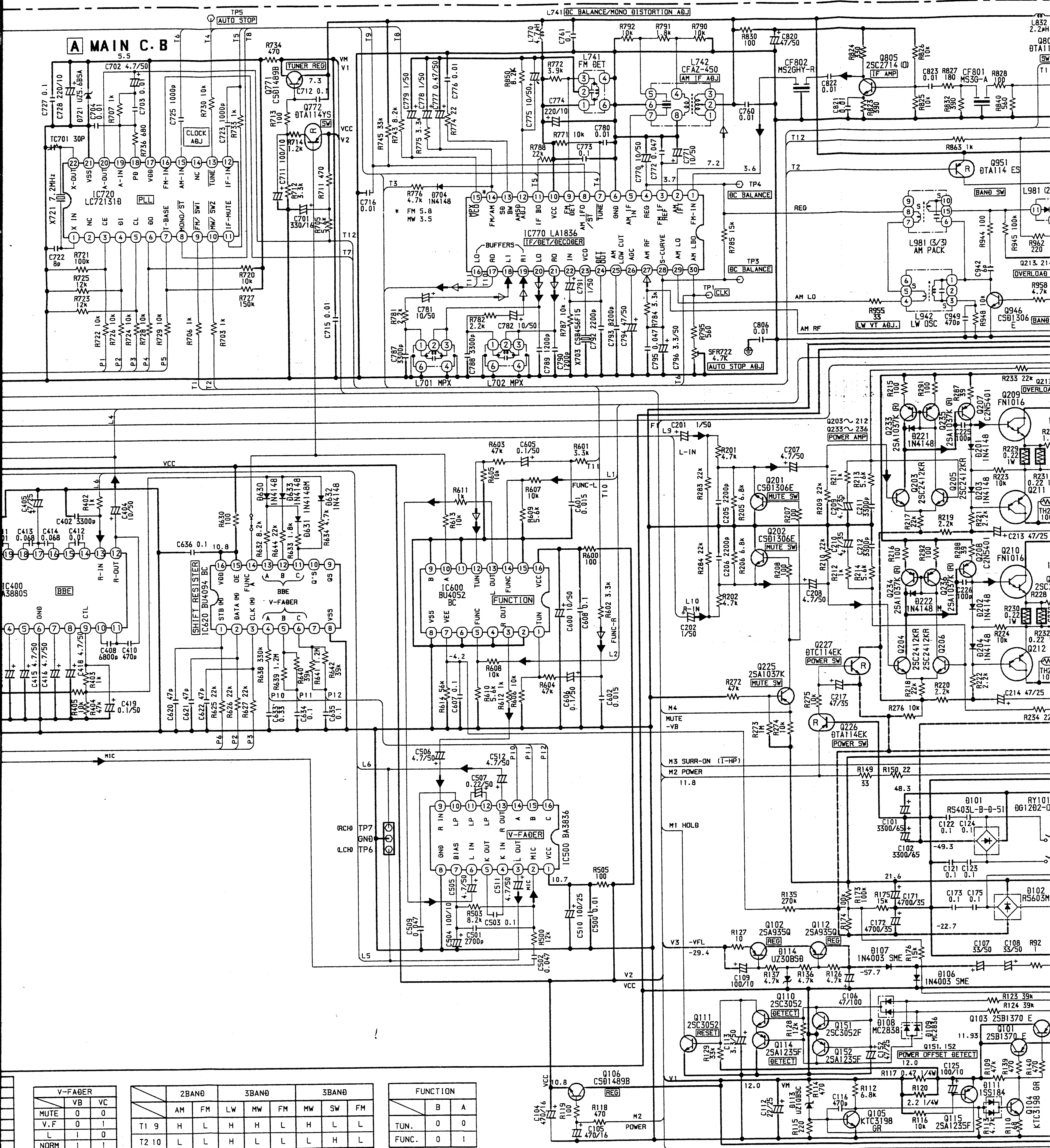
BBE			
	A	B	C
OFF	1	1	1
LEVEL1	0	1	1
LEVEL2	0	0	1
LEVEL3	1	0	0
LEVEL4	0	0	0

V-FADER		
	VB	VC
MUTE	0	0
V.F	0	1
L	1	0
NORM	1	1

	2BAND		3BAND			3BAND		
	AM	FM	LW	MW	FM	MW	SW	FM
T1 9	H	L	H	H	L	H	L	L
T2 10	L	L	H	L	L	L	H	L

FUNCTI
B
TUN. 0
FUNC. 0

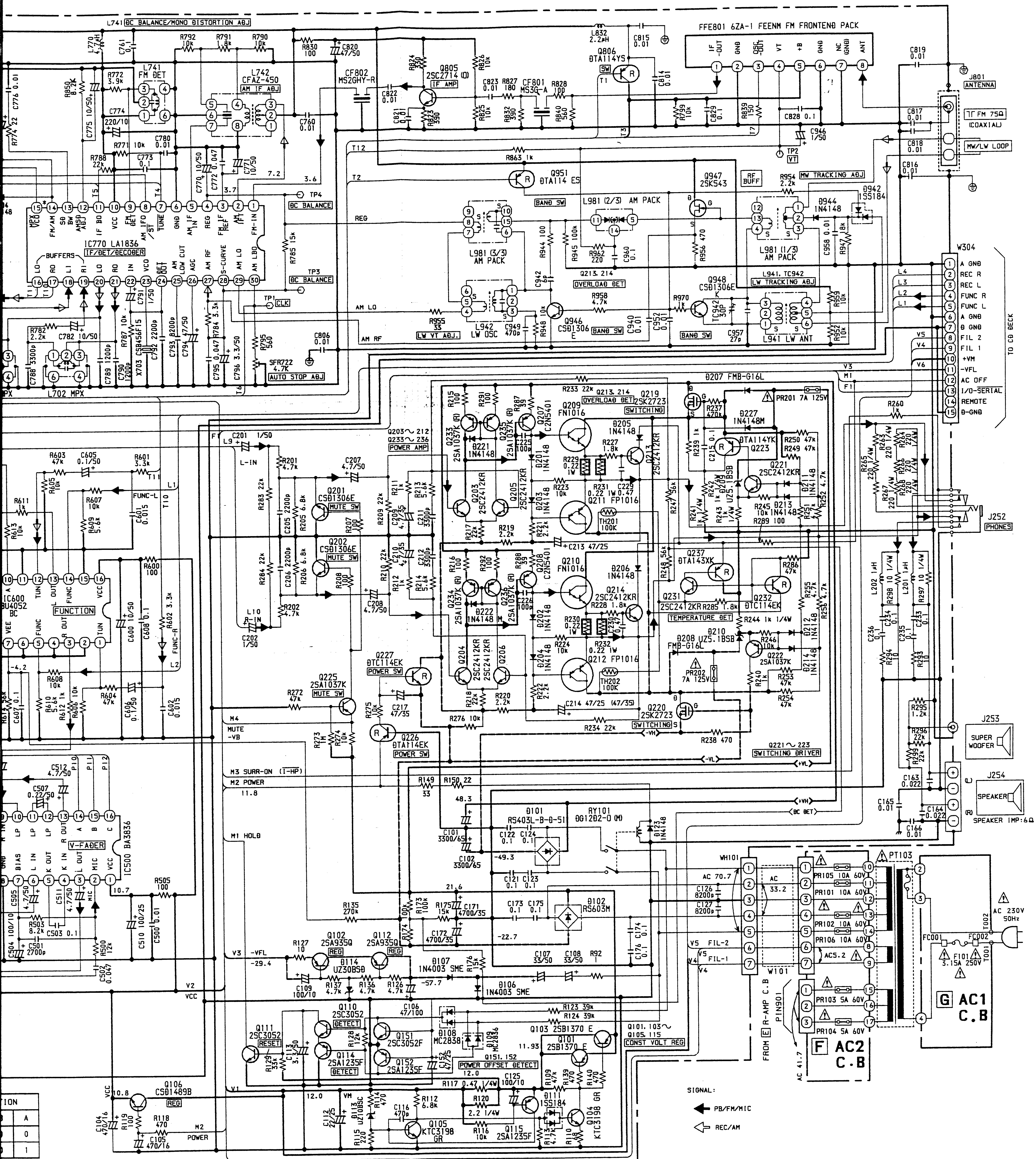
AIWA 2576


A MAIN C.B
TP5 AUTO STOP
IC720 LC72131D PLL
TUNER REG
Q771 CSD1489B
Q772 DTA114YS SW
CLOCK ADJ
X721 7.2MHz
TC701 30P
L741 DC BALANCE/MONO DISTORTION ADJ
L741 FM DET
L742 CFAZ-450 AM IF ADJ
IC770 LA1836 IF/DET/DECODER
BUFFERS
TP4 DC BALANCE
TP3 DC BALANCE
TP1 CLK
SFR722 4.7K AUTO STOP ADJ
L701 MPX
L702 MPX
X703 CSB456F15
* FM 5.8 MW 3.5
CF802 MS2GHY-R
Q805 2SC2714 (O) IF AMP
CF801 MS3G-A
Q951 DTA114 ES
BAND SW
L981 (3/3) AM PACK
L942 LW OSC
LW VT ADJ.
Q946 CSD1306
AM LO
AM RF
IC400 LA3880S BBE
IC620 BU4094 BC SHIFT RESISTER
BBE V-FADER
IC600 BU4052 BC FUNCTION
FUNC-L
FUNC-R
IC500 BA3836 V-FADER
TP7 (RCH)
GND
TP6 (LCH)
MIC
L-IN
Q201 CSD1306E MUTE SW
Q202 CSD1306E MUTE SW
Q203~212 Q233~236 POWER AMP
Q225 2SA1037K MUTE SW
Q227 DTC114EK POWER SW
Q226 DTA114EK POWER SW
Q209 FN1016
Q210 FN1016
M4 MUTE -VB
M3 SURR-ON (T-HP)
M2 POWER
M1 HOLD
D101 RS403L-B-D-S1
D102 RS603M
Q102 2SA935Q REG
Q112 2SA935Q REG
D114 UZ30BSD
D107 1N4003 SME
D106 1N4003 SME
Q110 2SC3052 DETECT
Q111 2SC3052 RESET
Q114 2SA1235F DETECT
Q151 2SC3052F
Q152 2SA1235F
D108 MC2838
Q151, 152 POWER OFFSET DETECT
Q103 2SB1370 E
Q101 2SB1370 E
Q106 CSD1489B REG
Q105 KTC3198 GR
Q115 2SA1235F
D111 1SS184
Q104 KTC3198 GR
D113 UZ10BSC
V1 V2 V3 VCC VM
-VFL

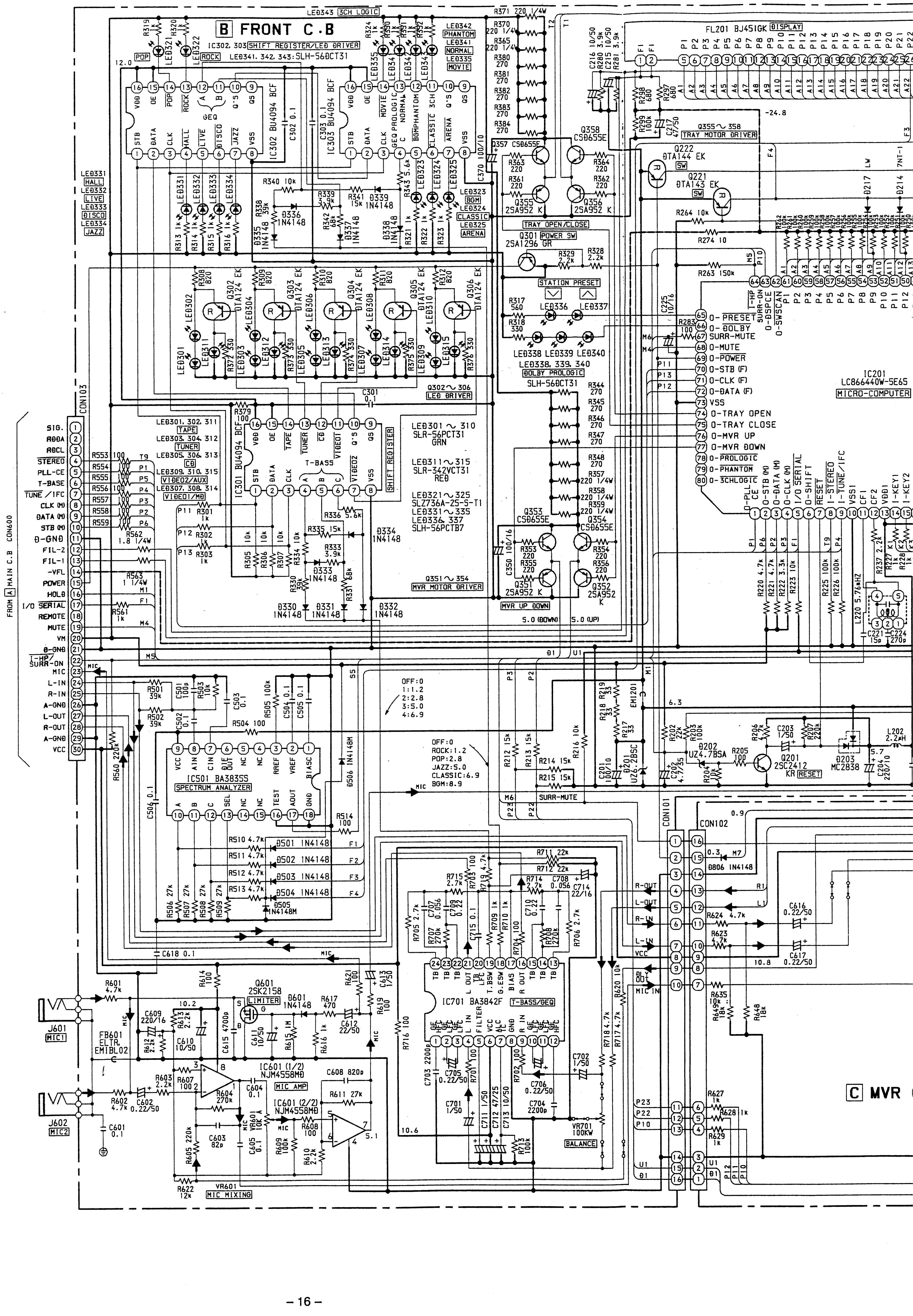
V-FADER	VB	VC
MUTE	0	0
V.F	0	1
L	1	0
NORM	1	1

	2BAND		3BAND			3BAND		
	AM	FM	LW	MW	FM	MW	SW	FM
T1 9	H	L	H	H	L	H	L	L
T2 10	L	L	H	L	L	L	H	L

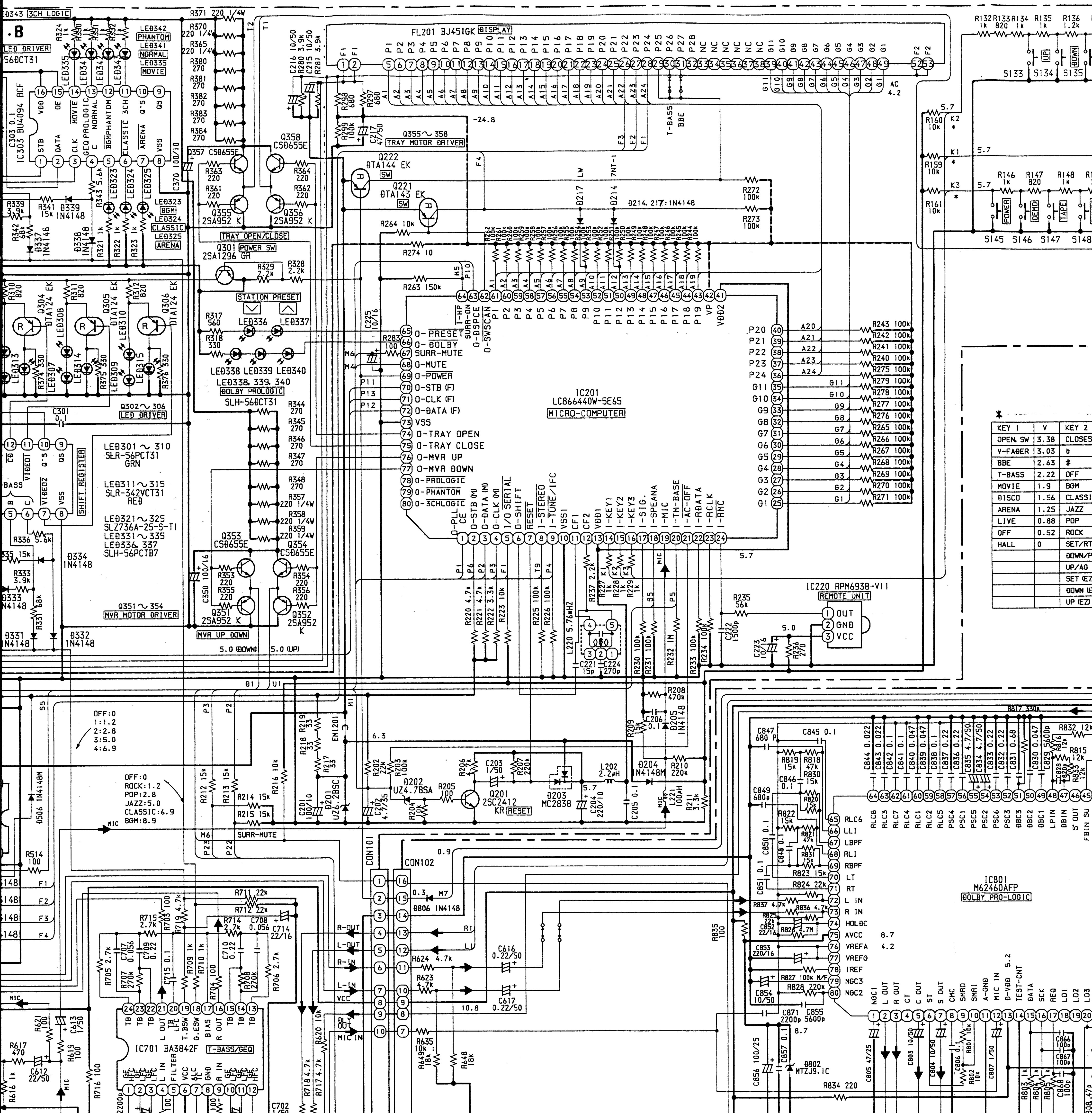
FUNCTION	B	A
TUN.	0	0
FUNC.	0	1


L741 DC BALANCE/MONO DISTORTION ADJ
FFE801 6ZA-1 FEENM FM FRONTEND PACK
L741 FM DET
L742 CFAZ-450 AM IF ADJ
CF802 MS2GHY-R
Q805 2SC2714 (O) IF AMP
CF801 MS3G-A
Q806 DTA114YS SW
J801 ANTENNA
FM 75Ω (COAXIAL)
MW/LW LOOP
TP2 VT
TP4 DC BALANCE
TP3 DC BALANCE
TP1 CLK
IC770 LA1836 IF/DET/DECODER
BUFFERS
Q951 DTA114 ES
BAND SW
L981 (2/3) AM PACK
Q947 2SK543
RF BUFF
R954 2.2k MW TRACKING ADJ
D942 1SS184
D944 1N4148
L981 (3/3) AM PACK
L981 (1/3) AM PACK
L941, TC942 LW TRACKING ADJ
Q948 CSD1306E
D213, 214 OVERLOAD DET
L942 LW OSC
LW VT ADJ.
Q946 CSD1306 E
L941 LW ANT
AM LO
AM RF
SFR722 4.7K AUTO STOP ADJ
L702 MPX
W304
A GND
REC R
REC L
FUNC R
FUNC L
A GND
D GND
FIL 2
FIL 1
+VM
-VFL
AC OFF
I/O-SERIAL
REMOTE
D-GND
TO CD DECK
D207 FMB-G16L
PR201 7A 125V
Q213, 214 OVERLOAD DET
Q219 2SK2723 SWITCHING
Q209 FN1016
Q207 2SC5401
Q203~212 Q233~236 POWER AMP
Q201 CSD1306E MUTE SW
Q202 CSD1306E MUTE SW
Q223 DTA114YK
Q221 2SC2412KR
D209 UZ5.1BSB
D227 1N4148M
Q211 FP1016
TH201 100K
Q210 FN1016
Q214 2SC2412KR
Q237 DTA143XK
Q231 2SC2412KR
Q232 DTC114EK
TEMPERATURE DET
D208 UZ5.1BSB
D210 FMB-G16L
PR202 7A 125V
Q212 FP1016
TH202 100K
Q220 2SK2723 SWITCHING
Q222 2SA1037K
Q221~223 SWITCHING DRIVER
J252 PHONES
J253 SUPER WOOFER
J254 SPEAKER
SPEAKER IMP:6Ω
IC600 BU4052BC FUNCTION
Q227 DTC114EK POWER SW
Q225 2SA1037K MUTE SW
Q226 DTA114EK POWER SW
MUTE -VB
M3 SURR-ON (I-HP)
M2 POWER
M1 HOLD
IC500 BA3836 V-FADER
D101 RS403L-B-D-51
RY101 DG1202-D (M)
D123 1N4148
C101 3300/65
C102 3300/65
D102 RS603M
Q102 2SA935Q REG
Q112 2SA935Q REG
D114 UZ30BSB
D107 1N4003 SME
D106 1N4003 SME
Q110 2SC3052 DETECT
Q111 2SC3052 RESET
Q151 2SC3052F
Q114 2SA1235F DETECT
Q152 2SA1235F
D108 MC2838
D109 MC2838
POWER OFFSET DETECT
Q103 2SB1370 E
Q101 2SB1370 E
Q101, 103~ Q105, 115 CONST VOLT REG
Q106 CSD1489B REG
D111 1SS184
Q105 KTC3198 GR
Q115 2SA1235F
Q104 KTC3198 GR
D113 UZ10BSC
WH101
W101
FROM E R-AMP C.B
PIN901
F AC2 C.B
PT103
G AC1 C.B
AC 230V 50Hz
F101 3.15A 250V
PR105 10A 60V
PR101 10A 60V
PR102 10A 60V
PR106 10A 60V
PR103 5A 60V
PR104 5A 60V
SIGNAL:
PB/FM/MIC
REC/AM

SCHEMATIC DIAGRAM – 2 (FRONT)

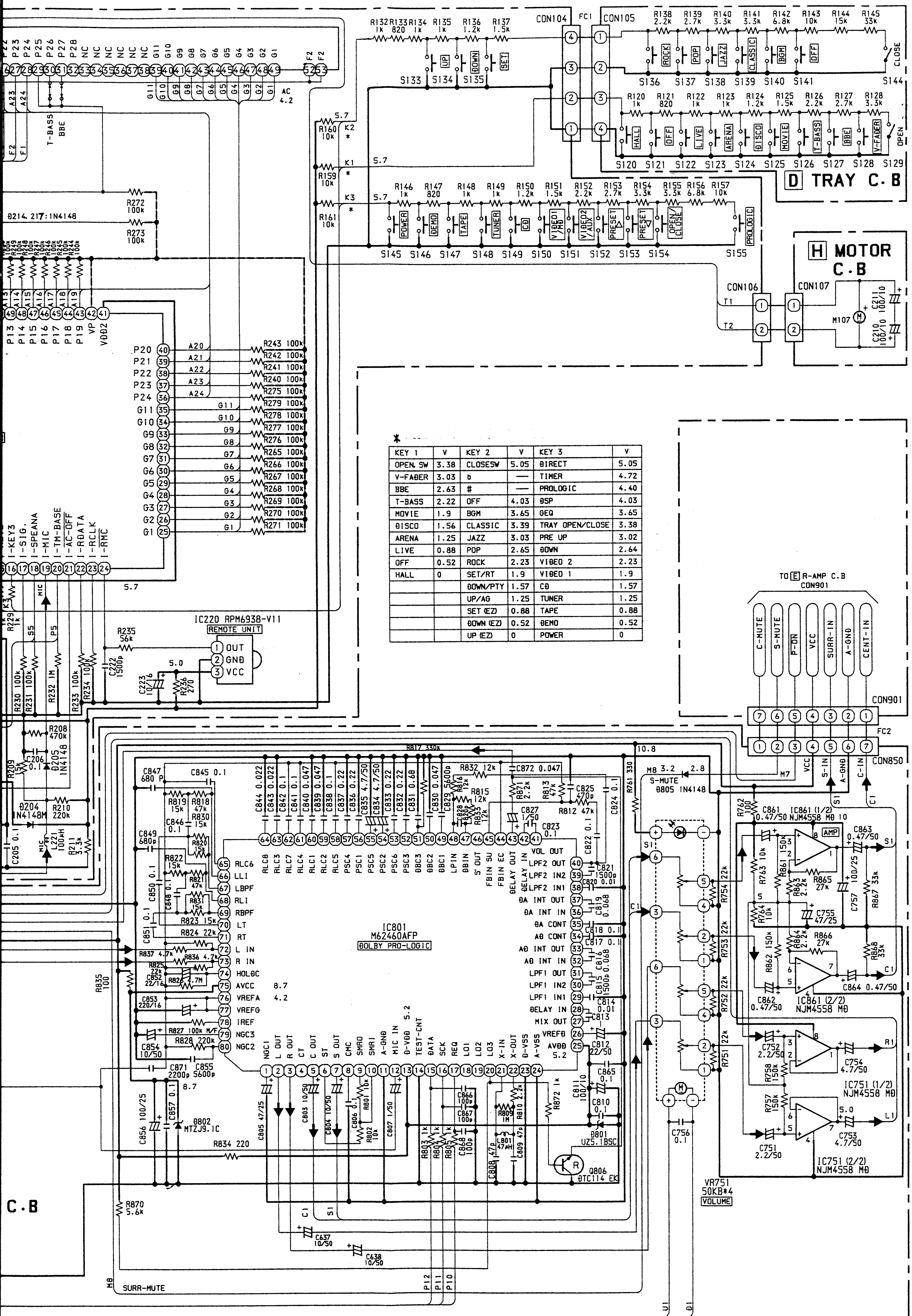


B FRONT C.B
IC302, 303 SHIFT REGISTER/LED DRIVER
ROCK LED341, 342, 343: SLH-56DCT31
POP
LED343 3CH LOGIC
LED342 PHANTOM
LED341 NORMAL
LED335 MOVIE
IC302 BU4094 BCF
IC303 BU4094 BCF
LED331 HALL
LED332 LIVE
LED333 DISCO
LED334 JAZZ
LED323 BGM
LED324 CLASSIC
LED325 ARENA
Q357 CSD655E
Q358 CSD655E
Q355 2SA952 K
Q356 2SA952 K
Q355 ∼ 358 TRAY MOTOR DRIVER
TRAY OPEN/CLOSE
Q301 POWER SW 2SA1296 GR
STATION PRESET
LED336 LED337
LED338 LED339 LED340
LED338, 339, 340 DOLBY PROLOGIC SLH-56DCT31
Q302 ∼ 306 LED DRIVER
Q302 DTA124 EK
Q303 DTA124 EK
Q304 DTA124 EK
Q305 DTA124 EK
Q306 DTA124 EK
LED301, 302, 311 TAPE
LED303, 304, 312 TUNER
LED305, 306, 313 CD
LED309, 310, 315 VIDEO2/AUX
LED307, 308, 314 VIDEO1/MD
IC301 BU4094 BCF SHIFT REGISTER
LED301 ∼ 310 SLR-56PCT31 GRN
LED311 ∼ 315 SLR-342VCT31 RED
LED321 ∼ 325 SLZ736A-25-S-T1
LED331 ∼ 335
LED336, 337 SLH-56PCTB7
Q351 ∼ 354 MVR MOTOR DRIVER
Q353 CSD655E
Q354 CSD655E
Q351 2SA952 K
Q352 2SA952 K
MVR UP DOWN
5.0 (DOWN)
5.0 (UP)
CON103
FROM A MAIN C.B CON600
SIG.
RDDA
RDCL
STEREO
PLL-CE
T-BASE
TUNE/IFC
CLK (M)
DATA (M)
STB (M)
D-GND
FIL-2
FIL-1
-VFL
POWER
HOLD
I/O SERIAL
REMOTE
MUTE
VM
D-GND
T-HP/SURR-ON
MIC
L-IN
R-IN
A-GND
L-OUT
R-OUT
A-GND
VCC
FL201 BJ451GK DISPLAY
Q222 DTA144 EK SW
Q221 DTA143 EK SW
IC201 LC866440W-5E65 MICRO-COMPUTER
O-PRESET
O-DOLBY
SURR-MUTE
O-MUTE
O-POWER
O-STB (F)
O-CLK (F)
O-DATA (F)
VSS
O-TRAY OPEN
O-TRAY CLOSE
O-MVR UP
O-MVR DOWN
O-PROLOGIC
O-PHANTOM
O-3CHLOGIC
-24.8
L220 5.76MHz
IC501 BA3835S SPECTRUM ANALYZER
OFF:0
1:1.2
2:2.8
3:5.0
4:6.9
OFF:0
ROCK:1.2
POP:2.8
JAZZ:5.0
CLASSIC:6.9
BGM:8.9
D501 1N4148
D502 1N4148
D503 1N4148
D504 1N4148
D505 1N4148M
Q202 UZ4.7BSA
D201 UZ6.2BSC
Q201 2SC2412 KR RESET
D203 MC2838
L202 2.2μH
EM1201
SURR-MUTE
CON101
CON102
D806 1N4148
IC701 BA3842F T-BASS/GEQ
VR701 100KW BALANCE
Q601 2SK2158 LIMITER
D601 1N4148
IC601 (1/2) NJM4558MD MIC AMP
IC601 (2/2) NJM4558MD
VR601 MIC MIXING
J601 MIC1
J602 MIC2
FB601 ELTR. EMIBL02
C MVR


.B
LED343 3CH LOGIC
LED DRIVER
IC303 BU4094 BCF
LED342 PHANTOM
LED341 NORMAL
LED335 MOVIE
LED323 BGM
LED324 CLASSIC
LED325 ARENA
FL201 BJ451GK DISPLAY
Q355～358 TRAY MOTOR DRIVER
Q222 DTA144 EK SW
Q221 DTA143 EK SW
TRAY OPEN/CLOSE
Q301 POWER SW 2SA1296 GR
STATION PRESET
LED336 LED337
LED338 LED339 LED340
LED338, 339, 340 DOLBY PROLOGIC SLH-56DCT31
Q302～306 LED DRIVER
SHIFT REGISTER
LED301～310 SLR-56PCT31 GRN
LED311～315 SLR-342VCT31 RED
LED321～325 SLZ736A-25-S-T1
LED331～335 LED336, 337 SLH-56PCTB7
Q351～354 MVR MOTOR DRIVER
MVR UP DOWN
5.0 (DOWN) 5.0 (UP)
IC201 LC866440W-5E65 MICRO-COMPUTER
IC220 RPM6938-V11 REMOTE UNIT
OUT GND VCC
S133 S134 S135
UP DOWN
POWER DEMO TAPE
S145 S146 S147 S148
OFF:0 1:1.2 2:2.8 3:5.0 4:6.9
OFF:0 ROCK:1.2 POP:2.8 JAZZ:5.0 CLASSIC:6.9 BGM:8.9
Q202 UZ4.7BSA
Q201 2SC2412 KR RESET
Q203 MC2838
CON101 CON102
IC701 BA3842F T-BASS/GEQ
VR701 100KW BALANCE
C MVR C.B
IC801 M62460AFP DOLBY PRO-LOGIC
SURR-MUTE

*

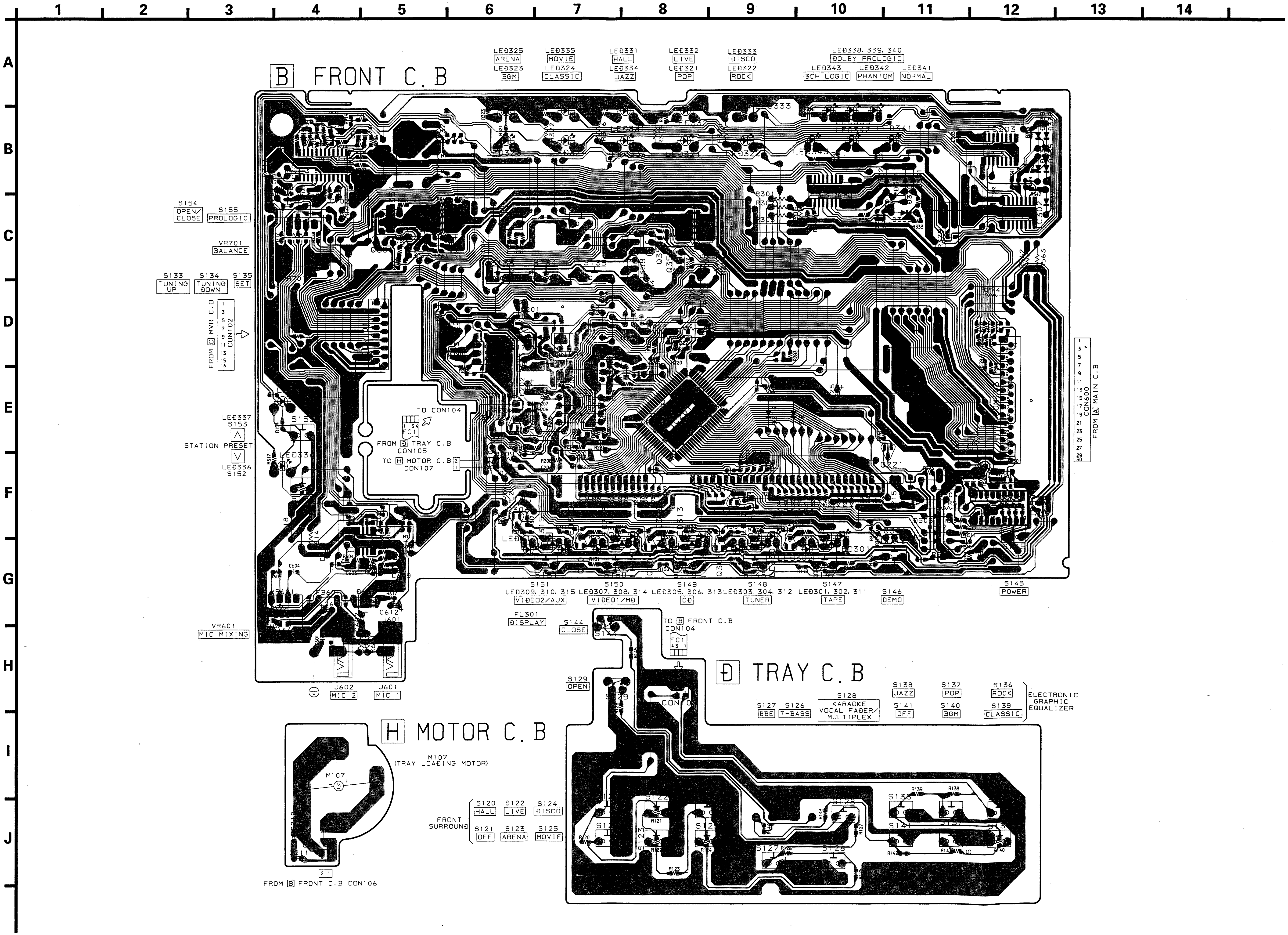
KEY 1	V	KEY 2
OPEN. SW	3.38	CLOSES
V-FADER	3.03	b
BBE	2.63	#
T-BASS	2.22	OFF
MOVIE	1.9	BGM
DISCO	1.56	CLASSI
ARENA	1.25	JAZZ
LIVE	0.88	POP
OFF	0.52	ROCK
HALL	0	SET/RT
		DOWN/P
		UP/AG
		SET (EZ
		DOWN (E
		UP (EZ)


CON104
FC1
CON105
D TRAY C.B
H MOTOR C.B
CON106
CON107
M107
TO E R-AMP C.B CON901
C-MUTE
S-MUTE
P-ON
VCC
SURR-IN
A-GND
CENT-IN
CON901
FC2
CON850
IC220 RPM6938-V11
REMOTE UNIT
OUT
GND
VCC
IC801
M62460AFP
DOLBY PRO-LOGIC
IC861 (1/2) NJM4558 MD
IC861 (2/2) NJM4558 MD
IC751 (1/2) NJM4558 MD
IC751 (2/2) NJM4558 MD
AMP
VR751 50KB*4
VOLUME
S-MUTE D805 1N4148
D802 MTZJ9.1C
D801 UZ5.1BSC
Q806 DTC114 EK
ROCK
POP
JAZZ
CLASSIC
BGM
OFF
CLOSE
HALL
OFF
LIVE
ARENA
DISCO
MOVIE
T-BASS
BBE
V-FADER
OPEN
UP
DOWN
SET
POWER
DEMO
TAPE
TUNER
CD
VIDEO1/MD
VIDEO2/AUX
PRESET ▽
PRESET △
OPEN/CLOSE
PROLOGIC
S133 S134 S135
S136 S137 S138 S139 S140 S141 S144
S120 S121 S122 S123 S124 S125 S126 S127 S128 S129
S145 S146 S147 S148 S149 S150 S151 S152 S153 S154 S155
SURR-MUTE
C.B

*

KEY 1	V	KEY 2	V	KEY 3	V
OPEN SW	3.38	CLOSESW	5.05	DIRECT	5.05
V-FADER	3.03	b	—	TIMER	4.72
BBE	2.63	#	—	PROLOGIC	4.40
T-BASS	2.22	OFF	4.03	DSP	4.03
MOVIE	1.9	BGM	3.65	GEQ	3.65
DISCO	1.56	CLASSIC	3.39	TRAY OPEN/CLOSE	3.38
ARENA	1.25	JAZZ	3.03	PRE UP	3.02
LIVE	0.88	POP	2.65	DOWN	2.64
OFF	0.52	ROCK	2.23	VIDEO 2	2.23
HALL	0	SET/RT	1.9	VIDEO 1	1.9
		DOWN/PTY	1.57	CD	1.57
		UP/AG	1.25	TUNER	1.25
		SET (EZ)	0.88	TAPE	0.88
		DOWN (EZ)	0.52	DEMO	0.52
		UP (EZ)	0	POWER	0

WIRING – 2 (FRONT)


1
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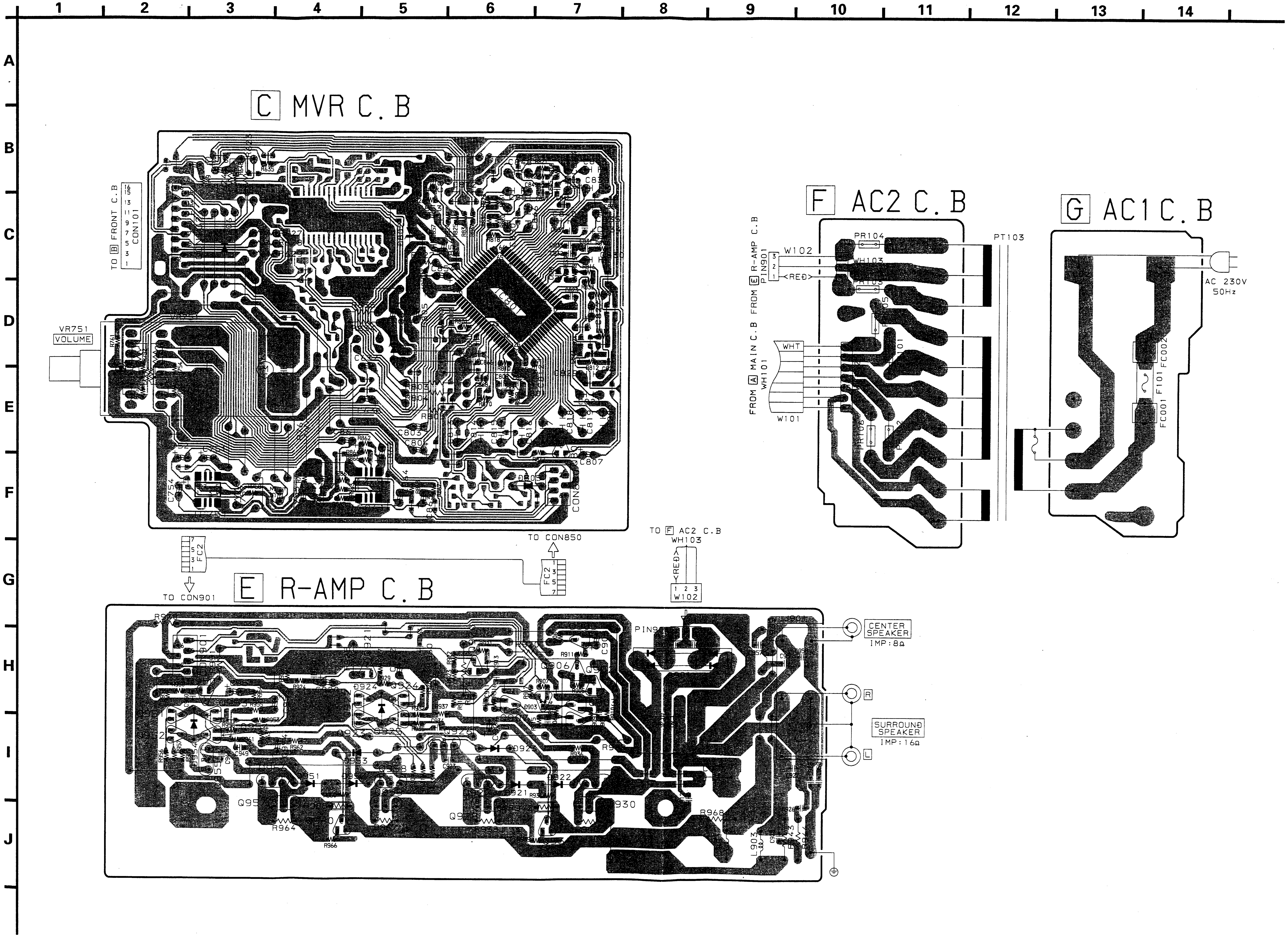
11
12
13
14
A
B
C
D
E
F
G
H
I
J
B FRONT C. B
LED325 ARENA
LED335 MOVIE
LED331 HALL
LED332 LIVE
LED333 DISCO
LED338, 339, 340 DOLBY PROLOGIC
LED323 BGM
LED324 CLASSIC
LED334 JAZZ
LED321 POP
LED322 ROCK
LED343 3CH LOGIC
LED342 PHANTOM
LED341 NORMAL
S154 OPEN/CLOSE
S155 PROLOGIC
VR701 BALANCE
S133 TUNING UP
S134 TUNING DOWN
S135 SET
FROM C MVR C.B CON102
LED337
S153
STATION PRESET
LED336
S152
TO CON104
FC1
FROM Đ TRAY C.B CON105
TO H MOTOR C.B CON107
VR601 MIC MIXING
J602 MIC 2
J601 MIC 1
S151 LED309, 310, 315 VIDEO2/AUX
S150 LED307, 308, 314 VIDEO1/MD
S149 LED305, 306, 313 CD
S148 LED303, 304, 312 TUNER
S147 LED301, 302, 311 TAPE
S146 DEMO
S145 POWER
FL301 DISPLAY
S144 CLOSE
TO B FRONT C.B CON104
FC1
S129 OPEN
Đ TRAY C.B
S138 JAZZ
S137 POP
S136 ROCK
S128 KARAOKE VOCAL FADER/MULTIPLEX
S127 BBE
S126 T-BASS
S141 OFF
S140 BGM
S139 CLASSIC
ELECTRONIC GRAPHIC EQUALIZER
FROM A MAIN C.B CON600
H MOTOR C.B
M107 (TRAY LOADING MOTOR)
M107
FRONT SURROUND
S120 HALL
S122 LIVE
S124 DISCO
S121 OFF
S123 ARENA
S125 MOVIE
FROM B FRONT C.B CON106

WIRING – 3 (MVR / R-AMP / POWER)



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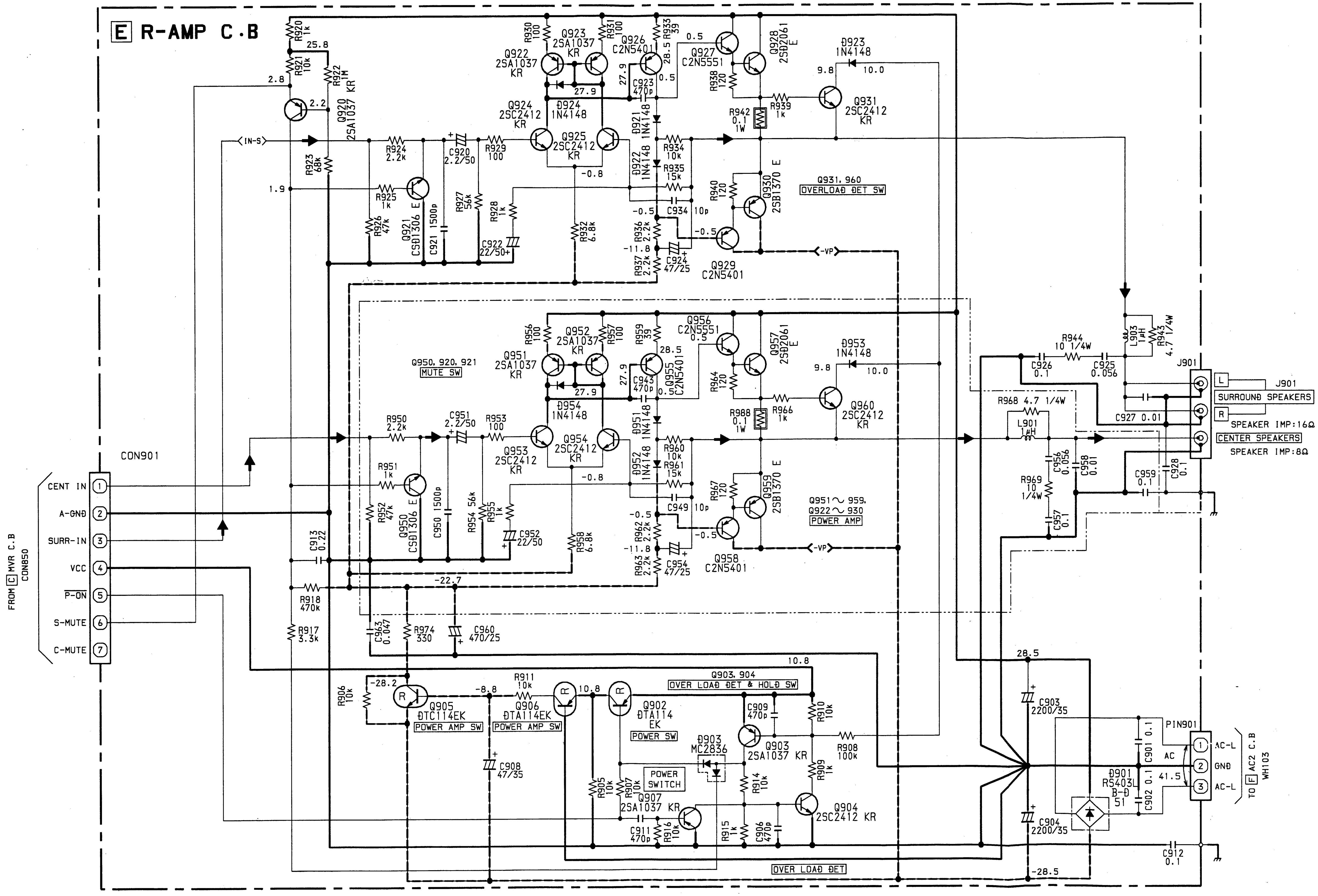
A
B
C
D
E
F
G
H
I
J
C MVR C.B
TO B FRONT C.B CON101
16
15
13
11
9
7
5
3
1
VR751
VOLUME
R761
R635
IC801
C807
C803
C804
R803
R804
R862
C754
F AC2 C.B
FROM E R-AMP C.B PIN901
W102
<RED>
3
2
1
FROM A MAIN C.B WH101
WHT
W101
PR104
WH103
PR103
PR106
PT103
G AC1 C.B
AC 230V
50Hz
FC002
F101
FC001
TO CON850
FC2
7
5
3
1
TO CON901
TO F AC2 C.B
WH103
<RED>
1 2 3
W102
E R-AMP C.B
PIN901
R911
C906
R907
D903
Q924
Q925
Q926
Q923
Q953
D922
D921
D951
Q930
R964
R966
R968
L903
CENTER
SPEAKER
IMP: 8Ω
R
SURROUND
SPEAKER
IMP: 16Ω
L

SCHEMATIC DIAGRAM – 3 (R-AMP)


E R-AMP C.B
CON901
CENT IN ①
A-GND ②
SURR-IN ③
VCC ④
P-ON ⑤
S-MUTE ⑥
C-MUTE ⑦
FROM C MVR C.B CON850
Q920 2SA1037 KR
Q921 CSD1306 E
Q922 2SA1037 KR
Q923 2SA1037 KR
Q924 2SC2412 KR
Q925 2SC2412 KR
Q926 C2N5401
Q927 C2N5551
Q928 2SD2061 E
Q929 C2N5401
Q930 2SB1370 E
Q931 2SC2412 KR
D921 1N4148
D922 1N4148
D923 1N4148
D924 1N4148
Q931, 960 OVERLOAD DET SW
Q950, 920, 921 MUTE SW
Q950 CSD1306 E
Q951 2SA1037 KR
Q952 2SA1037 KR
Q953 2SC2412 KR
Q954 2SC2412 KR
Q955 C2N5401
Q956 C2N5551
Q957 2SD2061 E
Q958 C2N5401
Q959 2SB1370 E
Q960 2SC2412 KR
D951 1N4148
D952 1N4148
D953 1N4148
D954 1N4148
Q951 ～ 959, Q922 ～ 930 POWER AMP
IN-S
-VP
J901
L SURROUND SPEAKERS
R
SPEAKER IMP:16Ω
CENTER SPEAKERS
SPEAKER IMP:8Ω
L901 1μH
L903 1μH
R944 10 1/4W
R943 4.7 1/4W
R968 4.7 1/4W
R969 10 1/4W
C925 0.056
C926 0.1
C927 0.01
C956 0.056
C957 0.1
C958 0.01
C959 0.1
C928 0.1
Q903, 904 OVER LOAD DET & HOLD SW
Q905 DTC114EK POWER AMP SW
Q906 DTA114EK POWER AMP SW
Q902 DTA114 EK POWER SW
D903 MC2836
POWER SWITCH
Q903 2SA1037 KR
Q904 2SC2412 KR
Q907 2SA1037 KR
OVER LOAD DET
C903 2200/35
C904 2200/35
D901 RS403L B-D 51
C901 0.1
C902 0.1
C912 0.1
PIN901
AC-L ①
GND ②
AC-L ③
AC
41.5
28.5
-28.5
TO F AC2 C.B WH103
C908 47/35
C960 470/25
C963 0.047
R974 330
R917 3.3k
R918 470k
C913 0.22
-22.7
10.8
-28.2
-8.8

IC DESCRIPTION

IC, LC866440W-5E65

Pin No.	Pin Name	I/O	Description
1	O-PLLCE	O	PLL IC chip enable output.
2	O-STB(M)	O	Main shift register, data latch srobe output.
3	O-DATA(M)	O	Main shift register/PLL/DSP related, data output.
4	O-CLK(M)	O	Main shift register/PLL/DSP related, data transfer clock output.
5	I/O SERIAL	I/O	FD microprocessor, I/O serial.
6	O-SHIFT	O	Microprocessor clock shift ouput during tuner reception.
7	RESET	I	Reset input (Reset at "L").
8	I-STEREO	I	Tuner stereo sensing input
9	I-TUNE/IFC	I	Tuner, SD sensing input/IF count serial data input.
10	VSS1	–	GND.
11	CF1	–	5.76MHz oscillator.
12	CF2	–	5.76MHz oscillator.
13	VDD1	–	Power supply input.
14~16	I-KEY 1~3	I	Key 1 ~ 3 A/D input.
17	I-SIG	I	Signal level A/D input for RDS. (Not used)
18	I-SPEANA	I	Spectrum analyzer level A/D input.
19	I-MIC	I	Mic level A/D input for auto vocal fader.
20	I-TMBASE	I	Reference clock input for watch (Automatically supporting 8/50/60 Hz).
21	I-AC OFF	I	Power failure sensing input (Hold at "L").
22	I-RDATA	I	Data input for RDS.
23	I-RCLK	I	Clock input for RDS.
24	I-RMC	I	System remote control signal input (active low).
25~35	G1~G11	O	FL grid output G1~G11.
36~40	P24~P20	O	FL segment output P24~P40.
41	VDD2	–	Power supply input.
42	VP	–	Power supply for display.
43~48	P19~P14	O	FL segment output P19~14.
49	P13	O	FL segment output /Diode input supporting OIRT.
50	P12	O	FL segment output/Diode input supporting.
51	P11	O	FL segment output /Diode input supporting NTSC.
52	P10	O	FL segment output /Diode input supporting PRO.
53	P9	O	FL segment output /Diode input supporting LW.
54	P8	O	FL segment output /Diode input supporting SW.
55	P7	O	FL segment output /Diode input supporting AM 10K.
56	P6	O	FL segment output /Diode input supporting AM STEREO.
57	P5	O	FL segment output /Diode input supporting FM JPN.
58	P4	O	FL segment output /Diode input supporting RDS.
59	P3	I/O	FL segment output /Diode input supporting BBE.
60	P2	I/O	FL segment output /Diode input supporting DSP.
61	P1	I/O	FL segment output /Diode input supporting K-CON.
62	O-SWSCAN	O	CD turntable reverse direction rotation output/SW scan (timing output).
63	O-DSP CE	O	CD turntable forward direction rotation output/DSP chip enable.
64	SUR ON	O	SUR ON(output at "H").
65	O-PRESET LED	O	Preset.
66	O-DOLBY	O	DOLBY LED control.
67	SURR-MUTE	O	Surround mute.
68	O-MUTE	O	System Mute ON/OFF output.
69	O-POWER	O	System power supply ON/OFF output.
70	O-STB(F)	O	Front shift register, data latch strobe output.
71	O-CLK(F)	O	Front shift register, data clock output.
72	O-DATA(F)	O	Front shift register, data output.
73	VSS	–	GND.
74	O-TRAY OP	O	CD tray open output.
75	O-TRAY CL	O	CD tray close output.
76	O-VR UP	O	Vol up output.
77	O-VR DN	O	Vol down output.
78~80	NC	–	Not used.

IC, M62460AFP

Pin No.	Pin Name	I/O	Description
1	NGC1	I	Noise sequencer 1.
2	L OUT	O	Selected output signal from BY-PASS,PLOLOGIC,OTHER and MUTE by selector.
3	R OUT	O	
4	CT	O	When it is PHANTOM MODE, CT do not output.
5	C OUT	O	C OUT is output from C Trimmer.
6	ST	O	ST output is selected from BNRout, Dout and 3STEREO/MUTE.
7	S OUT	O	SOUT is output from S.Trimmer.
8	CMC	I	Center mode control.
9	SMRO	O	This is a amplifler to control mixed level of surround output with external resistance.
10	SMRI	I	
11	A-GND	–	Connect to GND.
12	MIC IN	I	Microphone input with ECHO MODE.
13	D-VDD	–	Digital power supply.
14	TEST-CNT	–	Fixed to GND
15	DATA	I	Input via serial data from MCU.
16	SCK		
17	REQ		
18	LO1	O	Open collector output pin.
19	LO2		
20	LO3		
21	X-IN	I	Connect a 4-MHz ceramic filter.
22	X-OUT	O	
23	D-VSS	–	Digital GND.
24	A-VSS	–	Analog GND.
25	AVDD	–	Analog power supply.
26	VREFD	O	1/2 Vcc output Connect a filter capacitor.
27	MIX OUT	O	Front signal of delay that is S', L + R, L – R and MIC output
28	DELAY IN	I	This is a delay input. Input by AC cuppring.
29	LPF1 IN1	I	Low pass filter 1 input 1.
30	LPF1 IN2	I	Low pass filter 1 input 2.
31	LPF1 OUT	O	Low pass filter 1 output.
32	AD INT IN	I	A/D INTEGRAL CAL input.
33	AD INT OUT	O	A/D INTEGRAL CAL output.
34	AD CONT	–	A/D control.
35	DA CONT	–	D/A control.
36	DA INT IN	I	D/A INTEGRAL CAL input.
37	DA INT OUT	O	D/A INTEGRAL CAL output.
38	LPF2 IN1	I	Low pass filter 2 input 1.
39	LPF2 IN2	I	Low pass filter 2 input 2.
40	LOF2 OUT	O	Delay signal output.
41	VOL OUT	O	This is output of a delay volum that possible to control + 3dB~∞.

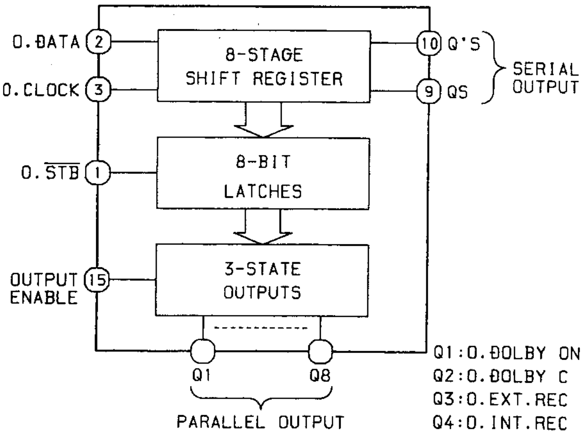
Pin No.	Pin Name	I/O	Description
42	DELAY IN	I	Delay signal input to a mixing amplifier.
43	DELAY OUT	O	Delay signal output from a mixing amplifler.
44	FBIN EC	I	Feedback signal intput with ECHO MODE.
45	FBIN SU		Feedback signal input with SURROUND MODE.
46	S'OUT	O	Surround channel output precedent to delay generator. Always outputs signals, irrespectiv of the operation mode (2-/3-/4-channel).
47	DBIN	I	This amplifler compornent 7KHz-LPF with external resistances and capaciters. LPF output is conected to input of Modified BNR.
48	LPIN	O	
49	DBC1	I	Modified B-type NR decorder.
50	DBC2	I	Modified B-type NR decorder.
51	DBC3	I	Modified B-type NR decorder.
52	PSC3	I	Dual-time constant and threshold switches.
53	PSC6	I	Dual-time constant and threshold switches.
54	PSC2	I	Dual-time constant and threshold switches.
55	PSC5	I	Dual-time constant and threshold switches.
56	PSC1	I	Dual-time constant and threshold switches.
57	PSC4	I	Dual-time constant and threshold switches.
58	RLC5	I	Log difference amplifiers.
59	RLC2	I	Log difference amplifiers.
60	RLC1	I	Log difference amplifiers.
61	RLC4	I	Log difference amplifiers.
62	RLC7	I	Full wave rectifier.
63	RLC3	I	Full wave rectifier.
64	RLC8	I	Full wave rectifier.
65	RLC6	I	Full wave rectifier.
66	LL1	I	Lch BPF in.
67	LBPF	O	Lch BPF feedback out.
68	RLI	I	Rch BPF in.
69	RBPF	O	Rch BPF feedback out.
70	LT	O	Lch selector #1 out.
71	RT	O	Rch selector #1 out.
72	L IN	I	Lch signal input.
73	R IN	I	Rch signal input.
74	HOLDC	I	Auto input balance control.
75	AVCC	–	Analog power supply.
76	VREFA	I	Vref in.
77	VREFG	I	Vref out.
78	IREF	I	Iref in.
79	NGC3	I	Noise sequencer 3.
80	NGC2	I	Noise sequencer 2.

IC, LC72131

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td rowspan="2">I/O</td><td rowspan="2">A crystal oscillator (7.2MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (LC866440W-5E65) when relevant key is operated. Active "H".</td></tr>
<tr><td>5</td><td>CLK</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (LC866440W-5E65).</td></tr>
<tr><td>7</td><td>TM-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / AM</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IFIN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>A MIN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>F MIN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>AIN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>AOUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>

IC BLOCK DIAGRAM

IC, BU4094BCP



Q1:O.DOLBY ON
Q2:O.DOLBY C
Q3:O.EXT.REC
Q4:O.INT.REC

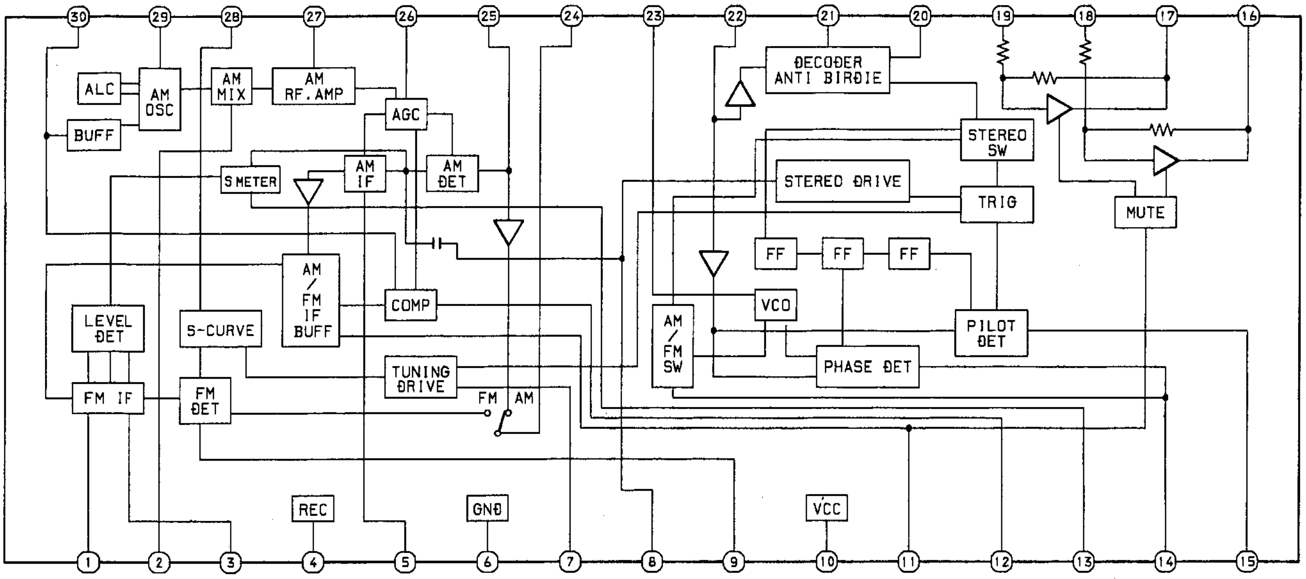
Q5:O.PLAY
Q6:O.PB2
Q7:O.LED
Q8:O.$\overline{\text{RMT}}$

TRUTH TABLE

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	QS	Q'S
↑	L	x	x	Z	Z	Q7	NO CHG.
↓	L	x	x	Z	Z	NO CHG.	QS
↑	H	L	x	NO CHG.	NO CHG.	Q7	NO CHG.
↑	H	H	L	L	Qn-1	Q7	NO CHG.
↑	H	H	H	H	Qn-1	Q7	NO CHG.
↓	H	x	x	NO CHG.	NO CHG.	NO CHG.	QS

Z = HIGH IMPEDANCE
x = DON'T CARE

IC, LA1836


30
29
28
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26
25
24
23
22
21
20
19
18
17
16
ALC
AM OSC
BUFF
AM MIX
AM RF.AMP
AGC
S METER
AM IF
AM DET
DECODER ANTI BIRDIE
STEREO SW
STEREO DRIVE
TRIG
MUTE
AM / FM IF BUFF
COMP
FF
FF
FF
VCO
PILOT DET
PHASE DET
AM / FM SW
LEVEL DET
S-CURVE
TUNING DRIVE
FM IF
FM DET
FM
AM
REC
GND
VCC
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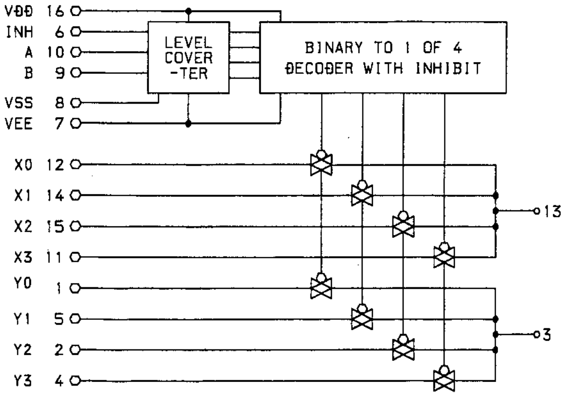
14
15

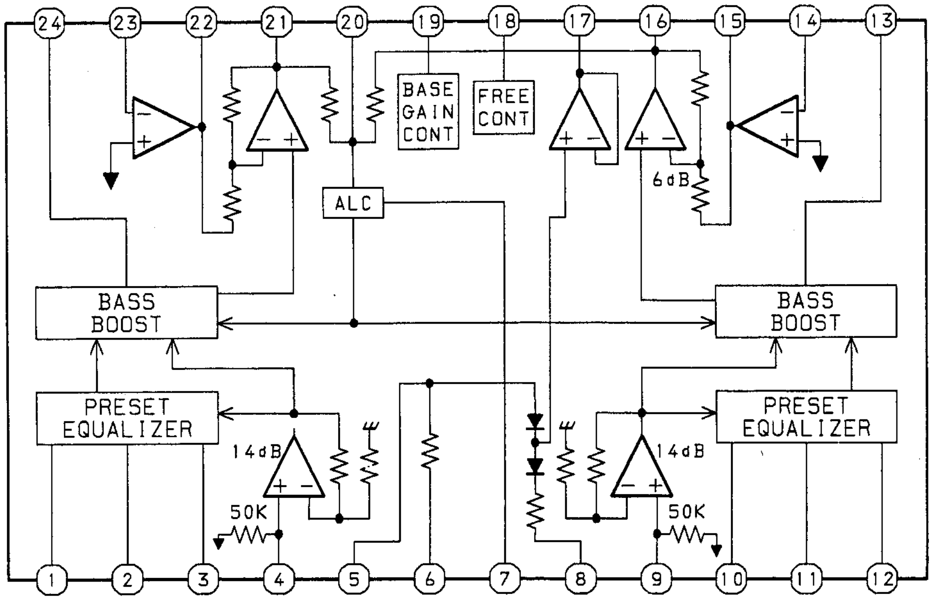
IC, BU4052BCP / BCF


VDD 16
INH 6
A 10
B 9
VSS 8
VEE 7
LEVEL COVER -TER
BINARY TO 1 OF 4 DECODER WITH INHIBIT
X0 12
X1 14
X2 15
X3 11
Y0 1
Y1 5
Y2 2
Y3 4
13
3

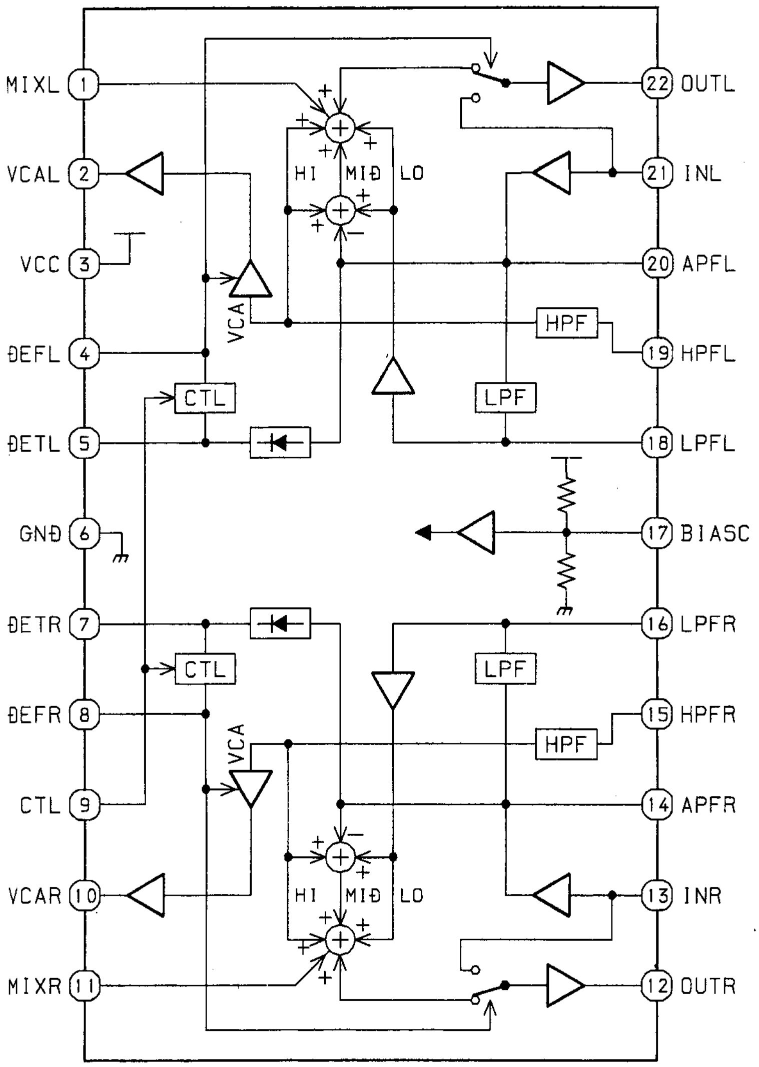
TRUTH TABLE

INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE

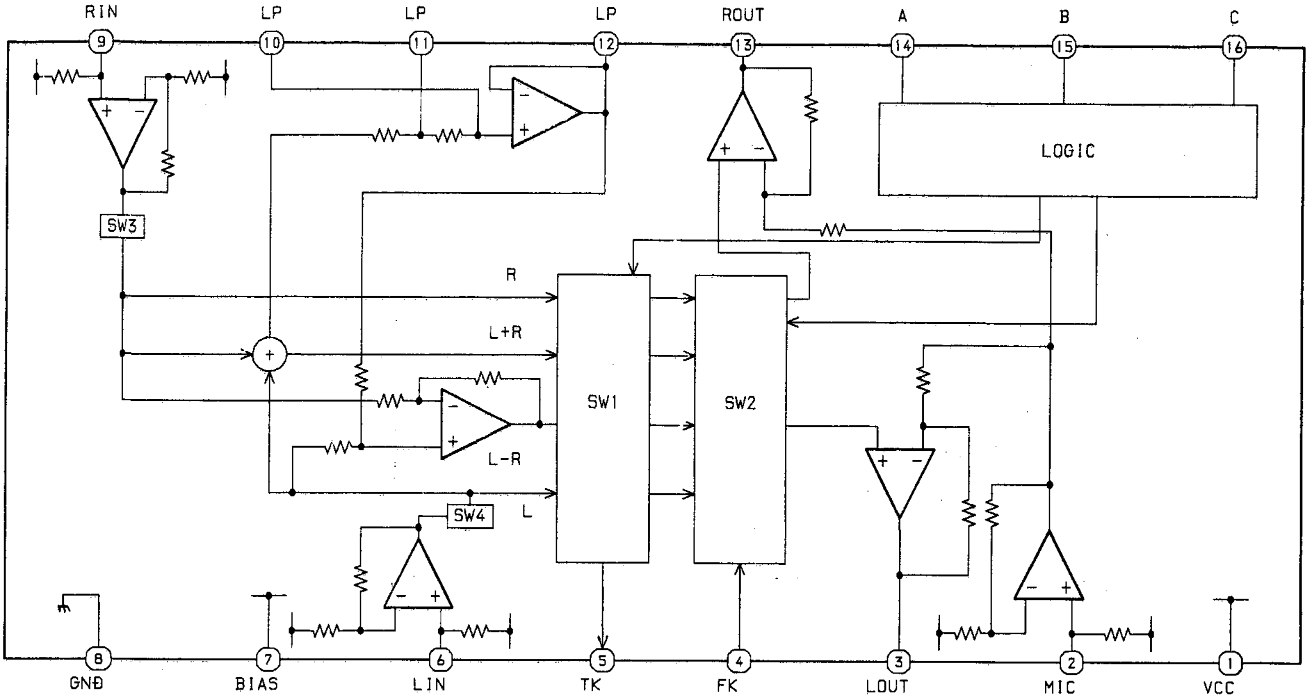
IC, BA3842F


24
23
22
21
20
19
18
17
16
15
14
13
BASE GAIN CONT
FREE CONT
ALC
6dB
BASS BOOST
BASS BOOST
PRESET EQUALIZER
PRESET EQUALIZER
14dB
14dB
50K
50K
1
2
3
4
5
6
7
8
9
10
11
12

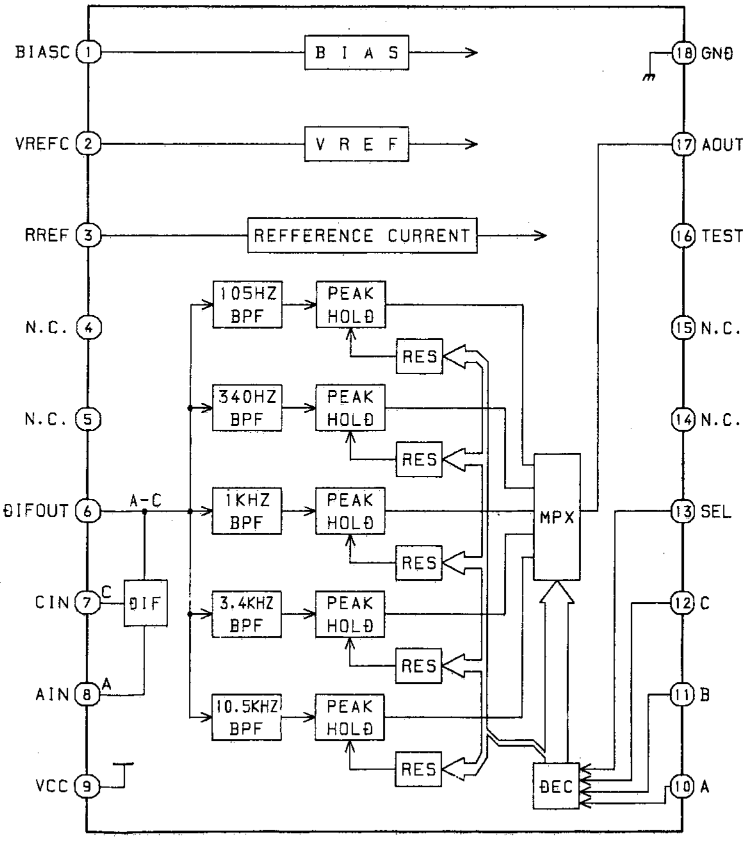
IC, BA3880S


MIXL 1
VCAL 2
VCC 3
DEFL 4
DETL 5
GND 6
DETR 7
DEFR 8
CTL 9
VCAR 10
MIXR 11
22 OUTL
21 INL
20 APFL
19 HPFL
18 LPFL
17 BIASC
16 LPFR
15 HPFR
14 APFR
13 INR
12 OUTR
HI
MID
LO
VCA
HPF
LPF
CTL
CTL
LPF
HPF
VCA
HI
MID
LO

IC, BA3836

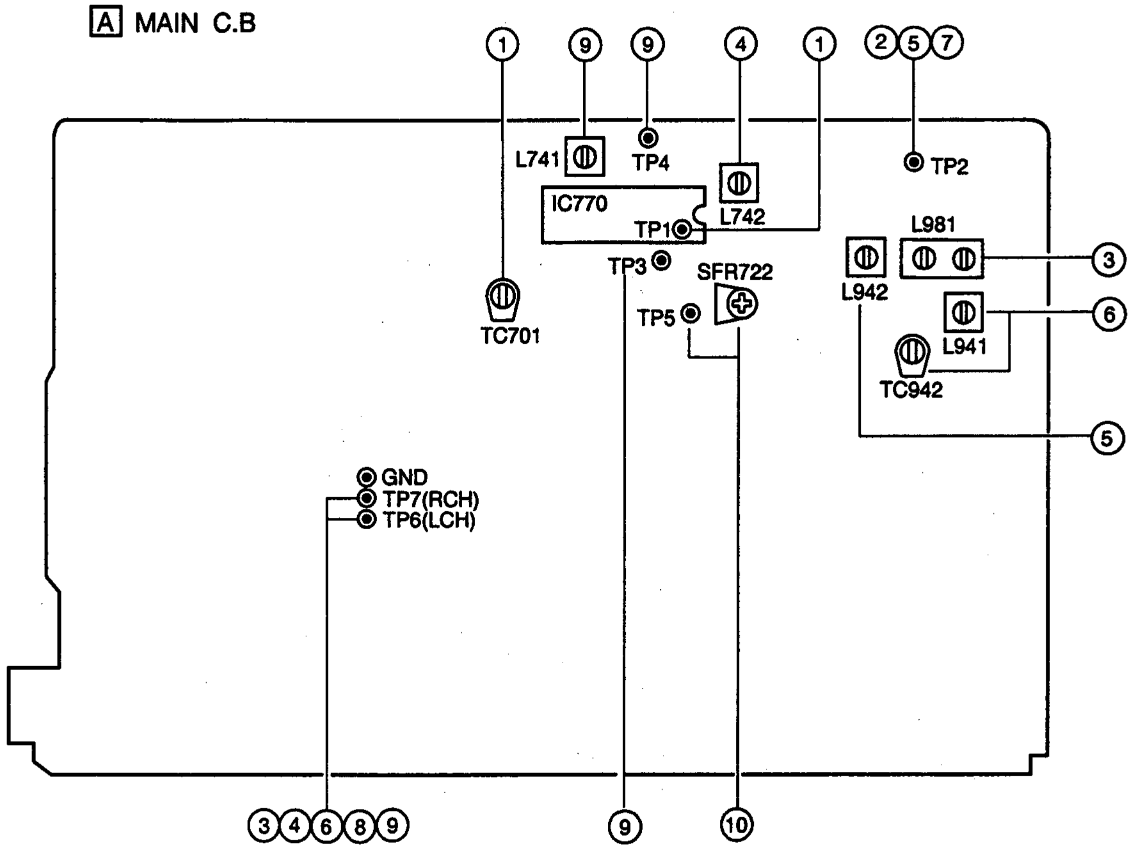

RIN
LP
LP
LP
ROUT
A
B
C
9
10
11
12
13
14
15
16
LOGIC
SW3
R
L+R
SW1
SW2
L-R
L
SW4
8
7
6
5
4
3
2
1
GND
BIAS
LIN
TK
FK
LOUT
MIC
VCC

IC, BA3835S


BIASC 1
B I A S
VREFC 2
V R E F
RREF 3
REFFERENCE CURRENT
N.C. 4
N.C. 5
DIFOUT 6
A-C
CIN 7
C
DIF
AIN 8
A
VCC 9
105HZ BPF
340HZ BPF
1KHZ BPF
3.4KHZ BPF
10.5KHZ BPF
PEAK HOLD
RES
MPX
DEC
18 GND
17 AOUT
16 TEST
15 N.C.
14 N.C.
13 SEL
12 C
11 B
10 A

ADJUSTMENT <TUNER>

[A] MAIN C.B



< TUNER SECTION >

1. Clock Adjustment
   Settings : • Test point : TP1 (CLK)
   • Adjustment location :TC701
   Method : Set to MW(AM) 1602kHz and adjust TC701 so that the test point becomes 2052kHz ± 0.01kHz.

2. MW(AM) VT Check
   Settings : • Test point : TP2 (VT)
   Method : Set to MW(AM) 1602kHz and check that the test point is 6.0V ± 1.0V.

3. MW(AM) Tracking Adjustment
   Settings : • Test point : TP6(Lch), TP7(Rch)
   • Adjustment location : L981
   Method : Set to MW(AM) 999kHz and adjust L981 so that the test point becomes maximum.

4. AM IF Adjustment
   Settings : • Test point : TP6(Lch), TP7(Rch)
   L742...450kHz

5. LW VT Adjustment
   Settings : • Test point : TP2 (VT)
   • Adjustment location : L942
   Method : Set to LW 144kHz and adjust L942 so that the test point is 1.3V ± 0.05V.

6. LW Tracking Adjustment
   Settings : • Test point : TP6(Lch), TP7(Rch)
   • Input level : Adjustable
   • Adjustment location :
   L941...144kHz
   TC942.....................................290kHz
   Method : Set up TC942 to center before adjustment. The level at 144kHz is adjust to MAX by L941. Then the level at 290kHz is adjust to MAX by TC942.

7. FM VT Check
   Settings : • Test point : TP2 (VT)
   Method : Set to FM 87.5MHz and check that the test point is more than 1.5V.
   Then set to FM 108MHz and check that the test point is less than 8.2V.

8. FM Tracking Check
   Settings : • Test point : TP6(Lch), TP7(Rch)
   Method : Check that the test point is 3~12dB and distortion is less than 3% at FM 98.0MHz.

9. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP3, TP4 (DC balance)
   : TP6, TP7 (Mono Distortion)
   • Adjustment location : L741
   • Input level : 54dB
   Method : Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V.
   Next, check that the distortion is less than 1.3%.

10. Auto Stop Level Adjustment
    Settings : • Test point : TP5 (Auto Stop)
    • Adjustment location : SFR722
    • Input level : 54dB
    Method : Set to FM 98.0MHz and adjust voltage low (about 0.1V) by SFR722. After that voltage high (about 7.0V) by 2.0dB down.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity : (THD 3%)	6dB ± 6dB [at 87.5 / 98.0 / 108.0MHz]
S/N 50dB Quieting sensitivity :	Less than 36dB [at 87.5 / 98.0 / 108.0MHz]
Signal to noise ratio :	More than 66dB [STEREO] More than 72dB [MONO] [at 98.0MHz]
Distortion :	Less than 1.2% [at 98.0MHz]
Auto stop level :	25dB +10/–5dB [at 98.0MHz]
Stereo separation :	More than 20dB [at 98.0MHz]
Intermediate frequency :	10.7MHz

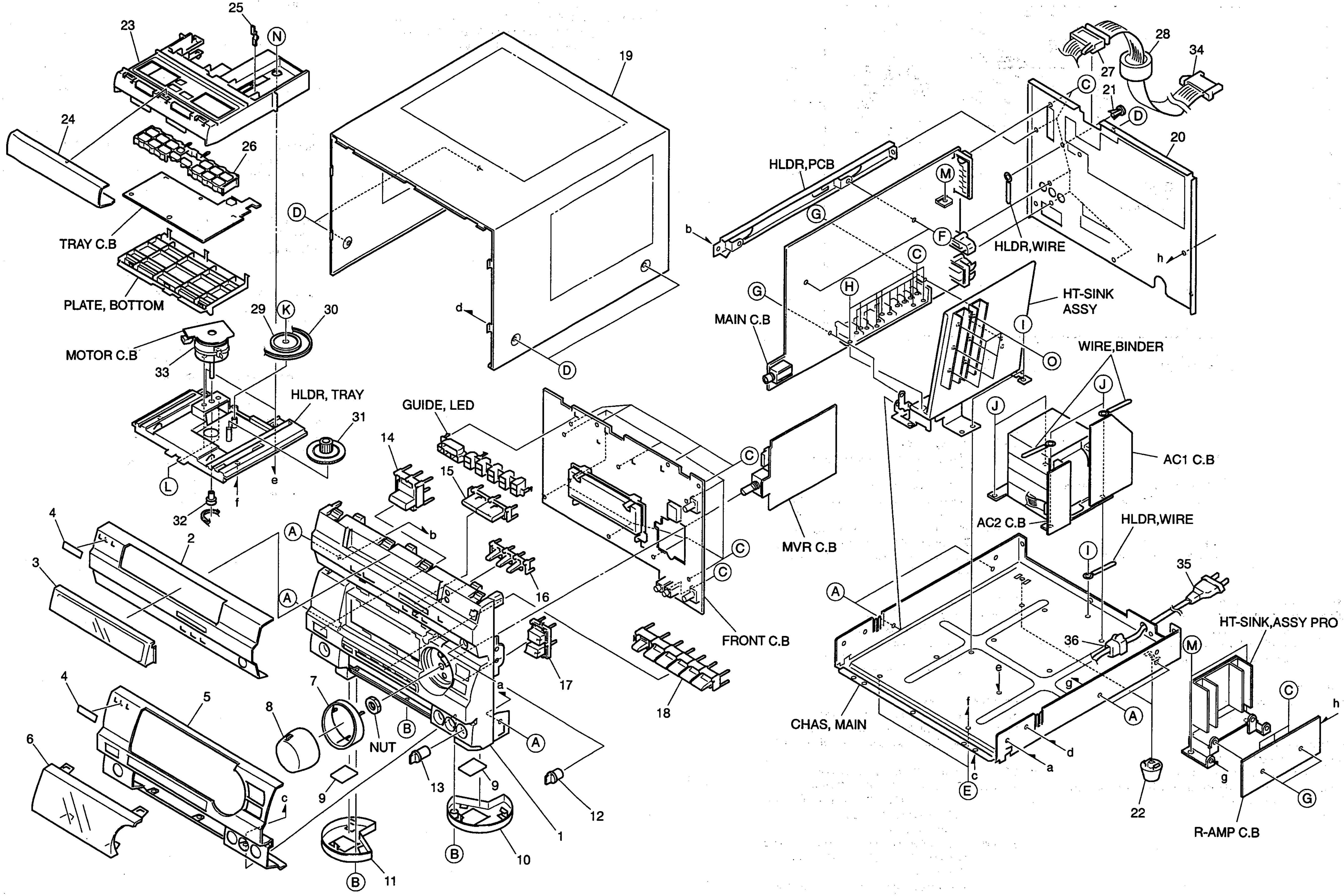
<MW (AM) SECTION>

Sensitivity : (S/N 20dB)	Less than 60dB [at 603kHz] Less than 58dB [at 999kHz/1404kHz]
Signal to noise ratio :	More than 36dB [at 999kHz]
Distortion :	Less than 1.5% [at 999kHz]
Auto stop level :	Less than 60dB [at 999kHz]
Intermediate frequency :	450kHz

<LW (AM) SECTION>

Sensitivity : (S/N 20dB)	Less than 70dB [at 144kHz] Less than 66dB [at 198kHz/290kHz]
Signal to noise ratio :	More than 34dB [at 198kHz]

MECHANICAL EXPLODED VIEW 1 / 1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23
N
24
26
TRAY C.B
PLATE, BOTTOM
29
K
30
MOTOR C.B
33
HLDR, TRAY
31
L
e
f
32
4
2
3
4
5
6
19
D
D
D
d
GUIDE, LED
14
15
b
A
A
16
17
18
7
8
NUT
9
9
13
12
10
11
B
B
B
B
1
a
A
c
C
C
C
MVR C.B
FRONT C.B
28
27
34
21
C
D
20
HLDR,PCB
M
G
F
HLDR,WIRE
h
C
H
G
MAIN C.B
HT-SINK
ASSY
I
O
WIRE,BINDER
J
J
AC1 C.B
AC2 C.B
HLDR,WIRE
I
35
A
36
M
HT-SINK,ASSY PRO
e
f
g
A
CHAS, MAIN
d
a
c
E
22
C
h
g
G
R-AMP C.B

MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

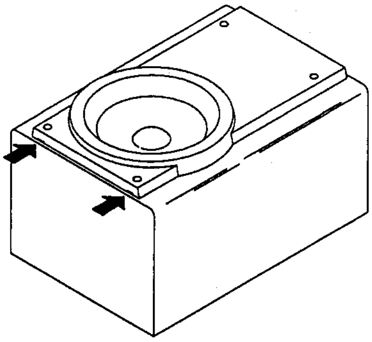
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NT1-001-010		CABI,FR
2	87-NTM-011-010		PANEL,FR GEQ 21
3	87-NT1-019-010		WINDOW,GEQ
4	87-B00-002-010		BADGE,AIWA 30 ABS SIL
5	87-NTM-010-010		PANEL,FR AMP 21
6	87-NT1-020-010		WINDOW,DISPLAY
7	87-NT1-034-010		RING,VOL
8	87-NT1-021-010		KNOB,RTRY VOL
9	80-VT1-202-010		FELT,12.5-15.5-2
10	87-NT1-035-010		RING,FOOT R
11	87-NT1-015-010		RING,FOOT L
12	87-NT1-024-010		KNOB,RTRY ECHO
13	87-NT1-023-010		KNOB,RTRY MIC
14	87-NT1-007-010		KEY,POWER
15	87-NT1-011-010		KEY,TIMER
16	87-NT1-010-010		KEY,SET
17	87-NT1-037-010		KEY,ASSY UP/ DOWN
18	87-NT1-013-010		KEY,FUN
19	87-NT1-043-010		CABI,STEEL
20	87-NTM-007-010		PANEL,REAR KSNM
21	87-084-077-010		NYLON RIVET, 3.5-4.5
22	87-085-213-010		FOOT,H12.5
23	87-NT1-005-010		TRAY,CONTROL
24	87-NT1-006-010		PANEL,TRAY
25	81-MT3-211-010		LEVER,OPEN
26	87-NT1-014-010		KEY,GEQ
27	89-VT5-202-010		BUSHING, CORD
28	87-003-317-010		F-BEAD,F0H2515-LG7
29	82-NT1-205-110		PULLEY,LOADING(*)
30	80-VW1-217-010		BELT,SQ 1.5
31	82-NT1-204-010		GEAR,LOADING
32	80-VW1-204-010		PULLEY,MOTOR
33	87-045-383-010		MOT,M9I50T28-2
34	87-NT1-650-010		CORD,FG15P
⚠ 35	87-A80-007-110		AC CORD ASSY,K BLK
36	87-085-185-010		BUSHING, AC CORD (E)
A	87-591-095-410		QIT+3-8
B	87-067-777-010		BVTT+3-6 W,CONVEX BL
C	87-067-703-010		TAPPING SCREW, BVT2+3-10
D	87-067-641-010		UTT2+3-8(W/O SLOT)BL
E	87-067-584-010		TAPPING SCREW, BVT2+3-6
F	87-078-084-010		BVTT+3-6 W,CONVEX
G	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
H	87-067-758-010		BVT2+3-12 W/O SLOT
I	87-067-688-010		BVTT+3-6
J	87-078-019-010		S-SCREW,IT+4-6
K	87-861-095-410		VFT2+3-8 SLOT
L	87-261-073-410		V+2.6-6
M	87-067-579-010		BVT2+3.8 W/O SLOT
N	87-721-095-410		QT2+3-8 W/O SLOT
O	87-B10-090-010		BVIT3B+3-12 GOLD

SPEAKER DISASSEMBLY INSTRUCTIONS

Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

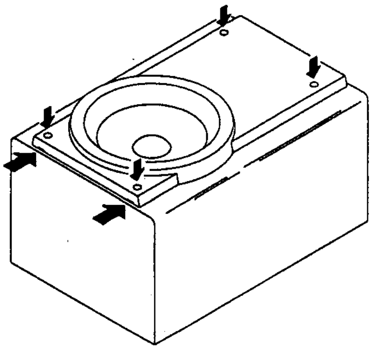
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.2

グリルフレームを外し、4個のゴムキャプをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

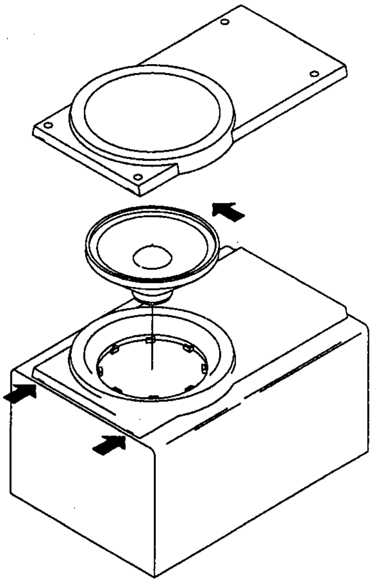
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows arround speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



SPEAKER PARTS LIST 1 / 1 (SX-NAVH100 <Y>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NSM-001-019		PANEL,FR
2	87-NSM-002-019		PANEL,TW
3	87-NSM-008-019		GRILLE,FRAME ASSY
4	87-NSM-010-019		PROTECTER
5	87-NSM-602-019		SPKR,W 160
6	83-MS2-603-119		SPKR,T 60
7	86-NSM-610-019		TERMINAL,ASSY
8	87-NSY-610-019		SPKR,CODE

SPEAKER PARTS LIST 1 / 1 (SX-R230 <Y>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-NSX-009-010		PANEL,FR
2	85-NSX-005-010		GRILLE,FRAME ASSY
3	85-NSX-601-010		SPKR
4	81-VSA-010-010		SPKR,CORD

SPEAKER PARTS LIST 1 / 1 (SX-C400 <Y>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-NSY-010-019		GRILLE,FRAME ASSY
2	85-NSY-602-019		SPKR
3	83-NSM-010-019		SPKR,CORD

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NTM-905-010		IB,K(E)M
2	85-NT3-661-010		RC-T506
3	87-006-225-010		AM LOOP ANT NC2
4	87-043-106-010		WIRE, FM ANT (Z)

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

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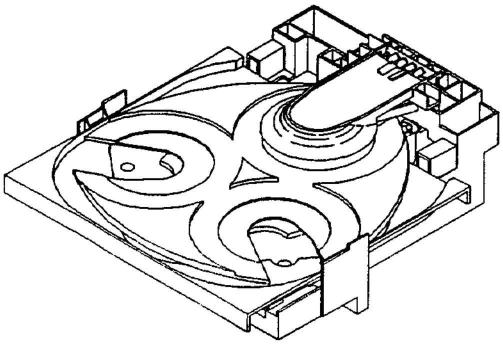
aiwa

VIDE-V16442

aiwa SERVICE

4ZG-1
4ZG-1A
4ZG-1B
4ZG-1Z



CD MECHANISM

• BASIC CD MECHANISM: KSM-2 131 BAM
3ZG-2 C1 / 3ZG-2 C2 / 3ZG-2 C5
•TYPE: English

BASIC NAME		DERIVATION NAME							
4ZG-1	*1	–	–	–	–	WR	–	–	–
	*2	G	D	F	R	–	V3L	V4L	V5
4ZG-1A		G	D	–	–	–	–	–	–
4ZG-1B		G	D	–	–	–	–	–	–
4ZG-1Z		–	D	–	–	–	–	–	–

- ●*1,*2, have the same BASIC NAME but the board structures are different. The CD BLOCK,VCD BLOCK of the WR are shown on the SERVICE MANUAL of each DERIVATION NAME .
- ●This mechanism has various derivation. Derivation name is indicated by the Service Manual for eath model.
- ●For different version of mechanism that may be introduced since the issue of this manual, only the new or modified points be discussed.

SERVICE MANUAL

S/M Code No. 09-965-128-10T

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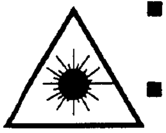
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid expo-sure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainit-ulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radi-ation exposure.

ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 4ZG-1 AGD
SUFFIX
(DERIVATION NAME)

BASIC NAME: 4ZG-1 (ORIGINAL MODEL)
4ZG-1A (SONY IC MODEL)
4ZG-1B (TOSHIBA IC MODEL)
4ZG-1Z (SANYO IC MODEL)

BASIC NAME		DERIVATION NAME							
4ZG-1	*1	—	—	—	—	WR	—	—	—
	*2	G	D	F	R	—	V3L	V4L	V5
4ZG-1A		G	D	—	—	—	—	—	—
4ZG-1B		G	D	—	—	—	—	—	—
4ZG-1Z		—	D	—	—	—	—	—	—

NOTE:
- *1 and *2 have the same BASIC NAME but the board structures are different.
- The CD BLOCK, VCD BLOCK of the WR is shown on the SERVICE MANUAL of each DERIVATION NAME.
- Model 4ZG-1 A, B and Z has "F" as the standard installation.

BOARD NAME / BASIC NAME		3CD C.B	LED C.B	T-T C.B	MOTOR C.B	MAIN VCD C.B	CD MECHA C.B	VCD C.B	DRIVE C.B
4ZG-1	*1	—	—	○	—	—	—	—	○
4ZG-1	*2	—	○	○	—	○	○	○ (EXCEPT V5)	—
4ZG-1A		○	○	○	○	—	—	—	—
4ZG-1B		○	○	○	○	—	—	—	—
4ZG-1Z		○	○	○	—	—	—	—	○

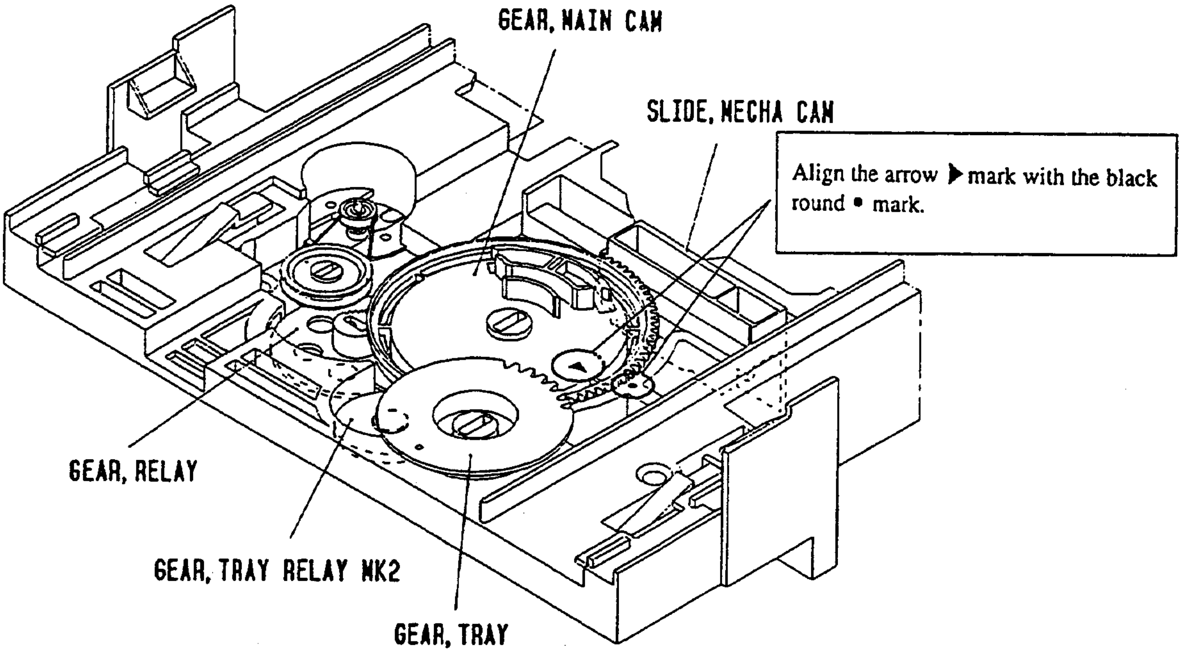
DERIVATION NAME

G:	Supporting the CD graphic feature
D:	Digital output function
F:	CD WINDOW Flash function (LED: AMBER/GREEN)
R:	Round Tray
WR:	With out Video CD and CD graphic board.
V3L:	Supporting the video CD function PAL
V4L:	Supporting the video CD function PAL
V5:	Supporting the video CD function

How to Adjust the Rotating Phase of the Gear, Main Cam

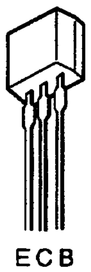
1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.

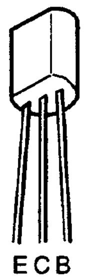

GEAR, MAIN CAM
SLIDE, MECHA CAM
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

Align the arrow ▶ mark with the black round ● mark.

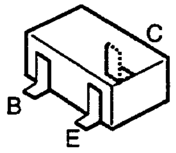
TRANSISTOR ILLUSTRATION



2SA933

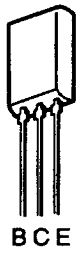


2SA1296
2SA1318
2SC1815
2SC2001
2SD655
2SD2172

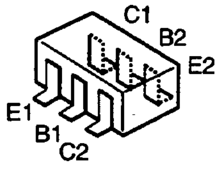


2SA1037
2SA1162
2SA1362
2SA1576
2SC2712
2SC3326
2SC4081
2SD1383

DTA123JK
DTA144TK
DTC114TK
DTC123JK
DTC124XK
DTC143TK
RN1441



2SD2005


C1
B2
E2
E1
B1
C2

HN1C03

4ZG-1

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	SC-L48-000-000		IC,CL480<V3L>
	S4-730-42X-010		IC,HD6473042F16(5EULF6)<V4L>
	SC-XD1-178-Q00		IC,CXD1178Q<V3L>
	SA-T27-C51-2R1		IC,AT27C512R-15JC<V3L>
	SX-D11-86X-010		IC,CXD1186CR(5EUNFC)<V4L>
	SC-008-K81-R10		IC,BR6265AF-10LL(5EUMFS)<V4L>
	ST-C51-425-6BJ		IC,TC514256BJ-70<V3L>
	SC-032-K81-MA0		IC,M5M5256CFP-70LL(5EUMFS)<V4L>
	87-001-948-080		IC,PST572CMT(5EUBFP)<V4L>
	SD-493-07X-010		IC,HD49307(5EUNFH)<V4L>
	SM-C68-MC7-05C		IC,MC68HC705C8ACP<V3L>
	87-002-259-080		IC,uPD6376GS<V3L>
	87-001-607-080		IC,BA4558F<V3L>
	82-NV1-628-080		IC,CXA1645M(5EUBFC)<V3L,V4L>
	SP-D63-210-010		IC,UPD63210GT-E1(5EUNFU)<V4L>
	SS-N74-HCU-04D		IC,SN74HCU04DR<V3L>
	S1-010-XXX-010		IC,UPD61010AGD-LBD(5EULF6)<V4L>
	SC-170-CXX-010		IC,TC170C100AF-001(5EUKFT)<V4L>
	SC-256-KG1-T10		IC,TC514260BJ-70(5EULMD)<V4L>
	SC-000-002-000		IC,TC514260BJ-70(5EULMD)<V4L>
	SL-C29-32X-010		IC,TLC2932IPW(5EUNFT)<V4L>
	87-017-745-019		IC,CXA1782BQ<EXCEPT V5,WR>
	87-002-783-110		IC,CXD2500BQ<EXCEPT WR>
	87-A20-257-049		IC,BA6791FP<V5>
	87-070-120-049		IC,BA6897 FP<EXCEPT V5,WR>
	87-070-429-019		IC,NJM2244L<EXCEPT V5,WR>
	87-002-532-019		IC,PQ05RF11<V5>
	87-017-825-019		IC,GP1F32T<D,V5>
	87-001-873-019		IC,LB1644<V5>
	84-ZG1-639-010		C-IC,MB89627<V5>
	ST-C74-HC2-570		IC,TC74HC257<V3L>
	83-NFT-618-010		IC,UPD78044BGF<V3L>
	85-MAR-614-010		IC,UPD78044BGF-025<V4L>
	87-070-430-019		IC,LA6530<EXCEPT V5,WR>
	87-017-543-089		IC,PST 600D<V5>
	87-A20-255-049		C-IC,SN74LV373NS<V5>
	87-A20-251-049		C-IC,BR6265BF-N10SL<V5>
	87-A20-252-049		C-IC,SN74LV00NS<V5>
	87-A20-253-049		C-IC,SN74LV04NS<V5>
	87-A20-254-049		C-IC,SN74LV32NS<V5>
	87-A20-244-010		C-IC,CL484<V5>
	87-020-881-089		IC,NJM78L05A<EXCEPT V5,WR>
	87-A20-200-040		C-IC,HM514260CJ7/CLJ7<V5>
	87-017-888-089		IC,NJM4558MD<V4L>
	84-ZG1-640-049		C-IC,LH5317<V5>
	87-A20-256-049		C-IC,PQ20VZ5U<V5>
	87-A20-247-019		C-IC,BU1417AK<V5>
	87-017-802-010		IC,LC7872E<G>
	87-A20-248-049		C-IC,BU2173F<V5>
	87-017-803-010		IC,LC32464P-80<G>
	87-A20-258-040		C-IC,SM5877AM<V5>
TRANSISTOR			
	SC-408-1XX-010		TR,2SC4081(5EQQ2S)<V4L>
	S1-441-XXX-010		TR,RN1441-A(5EQQRN)<V4L>
	SA-157-6XX-010		TR,2SA1576(5EQQ2S)<V4L>
	89-111-625-089		C-TR,2SA1162GR<EXCEPT V5,WR>
	87-026-237-089		C-TR,DTC124XK<EXCEPT WR>
	87-327-125-089		C-TR,2SC2712 GR<V5>
	89-113-625-089		C-TR 2SA 1362 GR(TAPG)<V5>
	89-327-125-089		C-TR,2SC2712GR<EXCEPT WR>
	89-112-965-089		TR,2SA1296GR<EXCEPT WR>
	87-026-608-089		C-TR,DTC 123 JK<F>
	89-324-585-010		TR,2SC2458<V3L>
	89-333-266-089		C-TR,2SC3326B<EXCEPT V5,WR>
	87-026-580-089		C-TR,DTA123JK<EXCEPT WR>
	87-026-470-089		TR,HN1C03 F B<V5>
	89-318-155-089		TR,2SC1815 GR<V5>
DIODE			
	S0-041-480-000		DIODE,1N4148<V3L>
	S1-305-700-283		DIODE,DA115(5EDQDD)<V4L>
	S0-240-010-000		DIODE,1N4001<V3L>
	SA-P20-2UX-010		DIODE,DAP202U(5EDQDD)<V4L>
	87-002-608-089		DIODE,DSF10TC<V4L>
	87-017-430-090		DIODE,RK14<V3L>
	87-020-465-089		DIODE,ISS133<EXCEPT V5,WR>
	SM-TZ2-7B0-000		ZENER,MTZ2.7B<V3L>
	87-020-027-089		C-DIODE 1SS184<V5>
	87-A40-180-049		C-DIODE SB07-015 C<V5>
	87-A40-196-089		C-ZENER UDZ6.2 B<V5>
MAIN VCD C.B<V3L,V4L>			
C101	87-012-140-089		C-CAP,S 470P-50 CH<EXCEPT WR>
C102	87-010-194-089		C-CAP,S 0.047-25 F
C103	87-010-178-089		C-CAP,S 1000P-50 B
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-010-384-089		CAP,E 100-25 SME
C106	87-010-196-089		C-CAP,S 0.1-25 F
C107	87-010-314-089		C-CAP,S 22P-50 CH
C108	87-010-314-089		C-CAP,S 22P-50 CH
C110	87-010-221-089		CAP,E 470-10 11L
C111	87-010-320-089		C-CAP,S 68P-50 CH
C112	87-010-196-089		C-CAP,S 0.1-25 F<V4L>
C112	87-016-463-089		C-CAP,S 0.33-16 B<V3L>
C113	87-010-260-089		CAP,E 47-25 SME
C114	87-010-498-049		CAP,E 10-16 GAS
C115	87-010-498-049		CAP,E 10-16 GAS<G>
C116	87-010-196-089		C-CAP,S 0.1-25 F
C117	87-010-197-089		C-CAP,S 0.01-25 B
C118	87-010-553-049		CAP,E 47-16 GAS<V4L>
C119	87-010-553-049		CAP,E 47-16 GAS
C120	87-010-197-089		C-CAP,S 0.01-25 B
C121	87-010-384-089		CAP,E 100-25 SME<V4L>
C122	87-010-320-089		C-CAP,S 68P-50 CH<D>
C123	87-010-401-089		CAP,E 1-50 SME
C124	87-A10-011-019		CAP,E 2200-25 SMG
C125	87-010-322-089		C-CAP,S 100P-50 CH
C126	87-010-178-089		C-CAP,S 1000P-50 B
C127	87-010-314-089		C-CAP,S 22P-50 CH<G>
C128	87-010-320-089		C-CAP,S 68P-50 CH
C129	87-010-263-089		CAP,E 100-10 SME<D>
C130	87-010-197-089		C-CAP,S 0.01-25 B<D>
C131	87-010-197-089		C-CAP,S 0.01-25 B
C132	87-010-196-089		C-CAP,S 0.1-25 F
C133	87-010-196-089		C-CAP,S 0.1-25 F
C134	87-010-196-089		C-CAP,S 0.1-25 F
C135	87-010-196-089		C-CAP,S 0.1-25 F
C136	87-010-154-089		C-CAP,S 10P-50 CH<V4L>
C201	87-010-382-089		CAP,E 22-25 SME
C202	87-010-197-089		C-CAP,S 0.01-25 B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C203	87-010-382-089		CAP,E 22-25 SME
C204	87-010-381-089		CAP,E 330-16 SME
C205	87-010-196-089		C-CAP,S 0.1-25 F
C206	87-010-196-089		C-CAP,S 0.1-25 F
C207	87-010-498-049		CAP,E 10-16 GAS<F>
C208	87-010-405-089		CAP,E 10-50 SME
C301	87-010-197-089		C-CAP,S 0.01-25 B
C306	87-010-381-089		CAP,E 330-16 SME<V4L>
C307	87-010-553-049		CAP,E 47-16 GAS
C308	87-010-498-049		CAP,E 10-16 GAS
C309	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C310	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C311	87-012-140-089		C-CAP,S 470P-50 CH<V4L>
C312	87-012-140-089		C-CAP,S 470P-50 CH<V4L>
C313	87-010-384-089		CAP,E 100-25 SME<V4L>
C315	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C316	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C317	87-010-197-089		C-CAP,S 0.01-25 B
C318	87-010-197-089		C-CAP,S 0.01-25 B
C401	87-010-405-089		CAP,E 10-50 SME<G>
C402	87-010-314-089		C-CAP,S 22P-50 CH<G>
C403	87-010-315-089		C-CAP,S 27P-50 CH<G>
C406	87-010-384-089		CAP,E 100-25 SME<G>
C407	87-010-384-089		CAP,E 100-25 SME<G>
C408	87-010-196-089		C-CAP,S 0.1-25 F<G>
C409	87-010-196-089		C-CAP,S 0.1-25 F<G>
CON6	83-NFT-628-019		CONN ASSY,8P<V3L>
EM101	87-008-474-089		F-BEAD,EMI BL02RN1
EM102	87-008-474-089		F-BEAD,EMI BL02RN1
FC1	85-NFT-612-019		FF-CABLE,30P-1.0<V4L>
FC2	88-912-131-219		FF-CABLE,12P 1.25
FC3	85-MAR-617-019		FF-CABLE,6P-1.25
J101	87-009-502-019		JACK,PIN 1PY EARTH
L101	87-003-149-089		COIL,47UH
L102	87-003-149-089		COIL,47UH
L103	87-003-143-089		COIL,4.7UH
L401	87-003-149-089		COIL,47UH<G>
L402	87-003-149-089		COIL,47UH<G>
M401	87-045-305-019		MOTOR, RF-500TB
PR101	87-026-689-089		PROTECTOR,1A 60V 491
SW201	87-036-109-019		SW,PUSH SPPB 61
SW202	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-270-089		VIB,XTAL 16.9344MHZ
X201	89-MX1-704-089		CERA LOCK(MU)3.9MHZ
X401	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>

MAIN VCD C.B<V5>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-010-197-089		C-CAP,S 0.01-25 B
C102	87-010-550-049		CAP,E 100-6.3 GAS
C103	87-010-318-089		C-CAP,S 47P-50 CH
C104	87-010-197-089		C-CAP,S 0.01-25 B
C105	87-010-318-089		C-CAP,S 47P-50 CH
C106	87-010-549-049		CAP,E 47-6.3 GAS
C107	87-012-156-089		C-CAP,S 220P-50 CH
C108	87-010-184-089		C-CAP,S 3300P-50 B
C109	87-010-194-089		C-CAP,S 0.047-25 F
C110	87-012-140-089		C-CAP,S 470P-50 CH
C111	87-010-197-089		C-CAP,S 0.01-25 B
C112	87-016-461-089		C-CAP,S 0.47-16 F
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-550-049		CAP,E 100-6.3 GAS
C115	87-010-197-089		C-CAP,S 0.01-25 B
C116	87-010-561-049		CAP,E 100-16 GAS
C117	87-010-562-049		CAP,E 220-10 GAS
C118	87-010-553-049		CAP,E 47-16 GAS
C119	87-010-197-089		C-CAP,S 0.01-25 B
C120	87-010-555-089		CAP,E 100-10 GAS
C121	87-010-197-089		C-CAP,S 0.01-25 B
C201	87-010-499-049		CAP,E 22-6.3 GAS
C202	87-010-197-089		C-CAP,S 0.01-25 B
C203	87-010-196-089		C-CAP,S 0.1-25 F
C204	87-010-316-089		C-CAP,S 33P-50 CH
C205	87-010-316-089		C-CAP,S 33P-50 CH
C206	87-010-499-049		CAP,E 22-6.3 GAS
C207	87-010-197-089		C-CAP,S 0.01-25 B
C208	87-010-197-089		C-CAP,S 0.01-25 B
C209	87-010-197-089		C-CAP,S 0.01-25 B
C210	87-010-197-089		C-CAP,S 0.01-25 B
C211	87-010-197-089		C-CAP,S 0.01-25 B
C212	87-010-318-089		C-CAP,S 47P-50 CH
C301	87-010-549-049		CAP,E 47-6.3 GAS
C302	87-010-549-049		CAP,E 47-6.3 GAS
C304	87-010-197-089		C-CAP,S 0.01-25 B
C305	87-010-197-089		C-CAP,S 0.01-25 B
C306	87-010-197-089		C-CAP,S 0.01-25 B
C307	87-010-197-089		C-CAP,S 0.01-25 B
C308	87-010-197-089		C-CAP,S 0.01-25 B
C309	87-010-197-089		C-CAP,S 0.01-25 B
C310	87-010-197-089		C-CAP,S 0.01-25 B
C311	87-010-197-089		C-CAP,S 0.01-25 B
C312	87-010-197-089		C-CAP,S 0.01-25 B
C313	87-010-318-089		C-CAP,S 47P-50 CH
C314	87-010-196-089		C-CAP,S 0.1-25 F
C315	87-010-196-089		C-CAP,S 0.1-25 F
C316	87-010-549-049		CAP,E 47-6.3 GAS
C317	87-010-314-089		C-CAP,S 22P-50 CH
C319	87-010-314-089		C-CAP,S 22P-50 CH
C320	87-010-196-089		C-CAP,S 0.1-25 F
C321	87-010-550-049		CAP,E 100-6.3 GAS
C322	87-010-197-089		C-CAP,S 0.01-25 B
C323	87-010-550-049		CAP,E 100-6.3 GAS
C324	87-010-197-089		C-CAP,S 0.01-25 B
C401	87-010-197-089		C-CAP,S 0.01-25 B
C402	87-010-550-049		CAP,E 100-6.3 GAS
C403	87-010-197-089		C-CAP,S 0.01-25 B
C404	87-012-140-089		C-CAP,S 470P-50 CH
C405	87-010-322-089		C-CAP,S 100P-50 CH
C406	87-012-140-089		C-CAP,S 470P-50 CH
C407	87-016-350-049		CAP,E 470-4 MA GAS
C408	87-010-196-089		C-CAP,S 0.1-25 F
C409	87-010-197-089		C-CAP,S 0.01-25 B
C410	87-010-197-089		C-CAP,S 0.01-25 B
C411	87-010-550-049		CAP,E 100-6.3 GAS
C412	87-010-197-089		C-CAP,S 0.01-25 B
C413	87-010-314-089		C-CAP,S 22P-50 CH
C414	87-010-316-089		C-CAP,S 33P-50 CH
C415	87-010-499-049		CAP,E 22-6.3 GAS
C416	87-010-197-089		C-CAP,S 0.01-25 B
C418	87-010-197-089		C-CAP,S 0.01-25 B
C420	87-010-196-089		C-CAP,S 0.1-25 F
C421	87-012-140-089		C-CAP,S 470P-50 CH
C422	87-010-184-089		C-CAP,S 3300P-50 B
C422	87-010-184-089		C-CAP,S 3300P-50 B
C423	87-010-175-089		C-CAP,S 560P-50 SL
C424	87-010-317-089		C-CAP,S 39P-50 CH
C425	87-012-140-089		C-CAP,S 470P-50 CH
C501	87-010-549-049		CAP,E 47-6.3 GAS
C502	87-010-196-089		C-CAP,S 0.1-25 F
C503	87-010-318-089		C-CAP,S 47P-50 CH
C505	87-010-313-089		C-CAP,S 18P-50 CH
C506	87-010-313-089		C-CAP,S 18P-50 CH
C507	87-010-197-089		C-CAP,S 0.01-25 B
C508	87-010-178-089		C-CAP,S 1000P-50 B
C509	87-010-178-089		C-CAP,S 1000P-50 B
C510	87-010-178-089		C-CAP,S 1000P-50 B
C511	87-010-178-089		C-CAP,S 1000P-50 B
C512	87-010-498-049		CAP,E 10-16 GAS
C513	87-010-498-049		CAP,E 10-16 GAS
C514	87-010-318-089		C-CAP,S 47P-50 CH
C515	87-010-318-089		C-CAP,S 47P-50 CH
C516	87-010-196-089		C-CAP,S 0.1-25 F
C599	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-561-049		CAP,E 100-16 5L
C602	87-010-432-049		CAP,E 10-16 OS

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-196-089		C-CAP,S 0.1-25 F
C605	87-A10-222-049		CAP,E 22-10 OS
C606	87-010-196-089		C-CAP,S 0.1-25 F
C607	87-012-140-089		C-CAP,S 470P-50 CH
C608	87-010-196-089		C-CAP,S 0.1-25 F
J401	87-009-502-019		JACK,PIN 1PY EARTH
L101	87-005-781-089		C-COIL,47UH FLC32C
L201	87-005-781-089		C-COIL,47UH FLC32C
L202	87-005-781-089		C-COIL,47UH FLC32C
L301	87-005-781-089		C-COIL,47UH FLC32C
L302	87-005-781-089		C-COIL,47UH FLC32C
L303	87-005-781-089		C-COIL,47UH FLC32C
L401	87-005-196-089		COIL,10UH
L402	87-005-781-089		C-COIL,47UH FLC32C
L404	87-005-190-089		COIL,3.3UH
L405	87-005-189-089		COIL,2.7UH
L501	87-005-781-089		C-COIL,47UH FLC32C
L601	87-005-469-089		COIL,4.7UH
L602	87-A50-095-019		COIL,68UH
M201	87-045-305-019		MOTOR, RF-500TB
S101	87-036-109-019		SW,PUSH SPPB 61
S102	87-036-109-019		SW,PUSH SPPB 61
S201	87-A90-162-019		SW,SL 1-1-3 SSSU
X201	87-A70-027-089		VIB,XTAL 8MHZ 100PPM
X401	87-A70-026-089		VIB,XTAL 13.5MHZ 50PPM
X501	87-030-270-089		VIB,XTAL 16.9344MHZ

CD MECHA C.B<V3L,V4L,V5>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-010-154-089		C-CAP,S 10P-50 CH<EXCEPT V5>
C101	87-010-334-080		C-CAP,S 12P-50 CH<V5>
C102	87-010-193-089		C-CAP,S 0.033-25 F<V5>
C102	87-010-184-089		C-CAP,S 3300P-50 B<EXCEPT V5>
C103	87-010-197-089		C-CAP,S 0.01-25 B<EXCEPT V5>
C103	87-010-993-089		C-CAP,S 0.056-25<V5>
C104	87-010-193-089		C-CAP,S 0.033-25 F<EXCEPT V5>
C104	87-010-993-089		C-CAP,S 0.056-25<V5>
C105	87-010-197-089		C-CAP,S 0.01-25 B
C107	87-010-197-089		C-CAP,S 0.01-25 B<V5>
C107	87-010-182-089		C-CAP,S 2200P-50 B<EXCEPT V5>
C108	87-010-805-089		C-CAP,S 1-16F
C109	87-010-322-089		C-CAP,S 100P-50 CH
C110	87-010-198-089		C-CAP,S 0.022-25 B<EXCEPT V5>
C110	87-010-993-089		C-CAP,S 0.056-25<V5>
C111	87-010-551-089		CAP ELECT 33-10V SRE<EXCEPT V5>
C111	87-010-499-049		CAP,E 22-6.3 GAS<V5>
C112	87-010-322-089		C-CAP,S 100P-50 CH
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C115	87-012-141-089		C-CAP,S 0.22-16 F<V5>
C116	87-010-182-089		C-CAP,S 2200P-50 B
C117	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C117	87-012-141-089		C-CAP,S 0.22-16 F<V5>
C118	87-010-196-089		C-CAP,S 0.1-25 F
C119	87-010-193-089		C-CAP,S 0.033-25 F<V5>
C119	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C120	87-010-549-089		CAP ELECT 47-6.3V
C121	87-010-549-089		CAP ELECT 47-6.3V
C122	87-010-495-089		CAP,E 2.2-35 5L<V5>
C122	87-010-497-089		CAP,E 4.7-35 5L<EXCEPT V5>
C123	87-010-549-089		CAP ELECT 47-6.3V
C125	87-010-553-089		CAP,E 47-16
C127	87-010-553-089		CAP,E 47-16
C127	87-010-549-089		CAP,E 47-6.3 GAS
C128	87-010-549-089		CAP ELECT 47-6.3V
C129	87-010-182-089		C-CAP,S 2200P-50 B
C131	87-010-196-089		C-CAP,S 0.1-25 F
C133	87-010-196-089		C-CAP,S 0.1-25 F
C134	87-010-196-089		C-CAP,S 0.1-25 F
C135	87-010-196-089		C-CAP,S 0.1-25 F
C136	87-010-197-089		C-CAP,S 0.01-25 B
C137	87-010-805-089		C-CAP,S 1-16F
C138	87-010-178-089		C-CAP,S 1000P-50 B
C140	87-010-805-089		C-CAP,S 1-16F<EXCEPT V5>
FC4	85-NFT-611-119		FF-CABLE,16P-1.0
M101	87-045-356-019		MOT,RF-310T A 30
M102	87-045-358-019		MOT,RF-310T A 43
R140	87-022-364-089		C-RES,S82K-1/10WF
R141	87-022-363-089		C-RES,S 68K-1/10W F
R142	87-022-363-089		C-RES,S 68K-1/10W F
R143	87-022-363-089		C-RES,S 68K-1/10W F
R144	87-022-363-089		C-RES,S 68K-1/10W F
R145	87-022-364-089		C-RES,S82K-1/10WF
SFR101	87-024-175-089		SFR,47K DIA6 V
SFR102	87-024-176-089		SFR,100K DIA6 V
SFR103	87-024-175-089		SFR,47K DIA6 V
SW101	87-036-340-019		SW,LEAF LSA-1121

T-T C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C401	87-018-214-089		CAP TC U 0.1-50 F
FC401	84-ZG1-614-119		CABLE FFC 5P-1.25
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

LED C.B<F>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
LED101	87-070-200-089		LED,SLP636C-81-S-T1<F>
LED102	87-017-350-080		LED,SEL1550CM<F>
LED103	87-017-350-080		LED,SEL1550CM<F>
LED104	87-070-200-089		LED,SLP636C-81-S-T1<F>

VCD C.B<V3L>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C2	87-010-378-010		CAP,E 10-16
C3	87-010-378-010		CAP,E 10-16
C4	87-010-374-010		CAP,E 47-10
C5	87-010-374-010		CAP,E 47-10
C9	87-010-378-010		CAP,E 10-16
C10	87-010-378-010		CAP,E 10-16
C11	87-010-378-010		CAP,E 10-16
C12	87-010-374-010		CAP,E 47-10
C13	87-010-378-010		CAP,E 10-16
C17	87-010-248-010		CAP,E 220-10
C22	87-010-374-010		CAP,E 47-10
C23	87-010-374-010		CAP,E 47-10
C32	87-010-378-010.		CAP,E 10-16
C47	87-010-248-010		CAP,E 220-10
C49	87-010-378-010		CAP,E 10-16
C52	87-010-248-010		CAP,E 220-10
C101	87-010-378-010		CAP,E 10-16
L1	SL-AL0-4NA-100		COIL,10UH
L2	SL-AL0-4NA-472		COIL,4.7UH
X1	SS-KY4-05M-000		X'TAL,40.5MHz
X2	SS-KY4-M00-000		X'TAL,4MHz
X3	SS-KY4-433-616		X'TAL,4.433616MHz

VCD C.B<V4L>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C13	87-010-367-080		CAP,E 4.7-25V(5ECEC1)
C38	87-010-075-040		CAP,E 10-16V(5ECEC1)
C40	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C44	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C47	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C48	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C51	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C54	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C56	87-010-076-810		CAP,E 22-6.3V(5ECEC0)
C58	87-010-076-810		CAP,E 22-6.3V(5ECEC0)
C81	87-016-155-010		CAP,E 1000-6.3V5ECER0)
C128	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C133	87-010-053-810		CAP,E 1-50V(5ECEC1)
C150	87-010-075-040		CAP,E 10-16V(5ECEC1)

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C151	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C152	87-016-155-010		CAP,E 1000-6.3V5ECER0)
C157	87-010-075-040		CAP,E 10-16V(5ECEC1)
CT1	S2-130-007-010		CAP,TRIMMER 30PF(5ECT04)
L1	S7-001-XXX-100		C-COIL,47UH(5ELQE4)
X1	S0-120-003-010		X'TAL,12.0000MHZ(5EXMA4)
X2	S0-177-343-010		X'TAL,17.73447MHZ(5EXMA4)

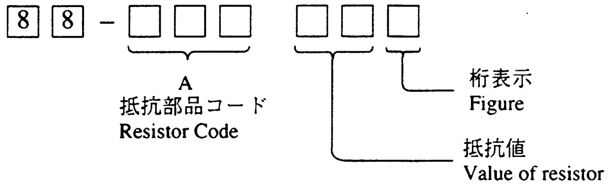
SUB C.B<V3L>

DRIVE C.B<WR>

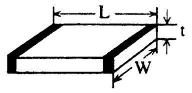
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
M1	87-045-358-019		MOT,RF-310TA 43
M2	87-045-356-019		MOT,RF-310TA 30
SW1	87-A90-042-019		SW,LEAF MSW 17310 MVPO

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

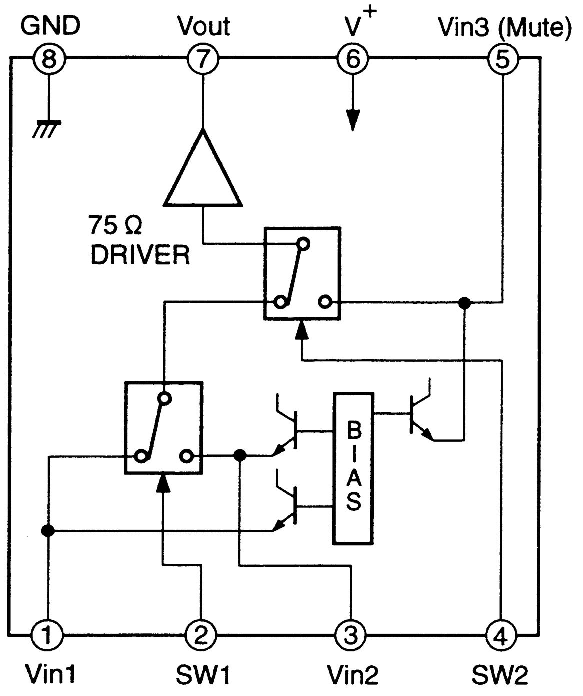

8 8 - □□□ □□□
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード ：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

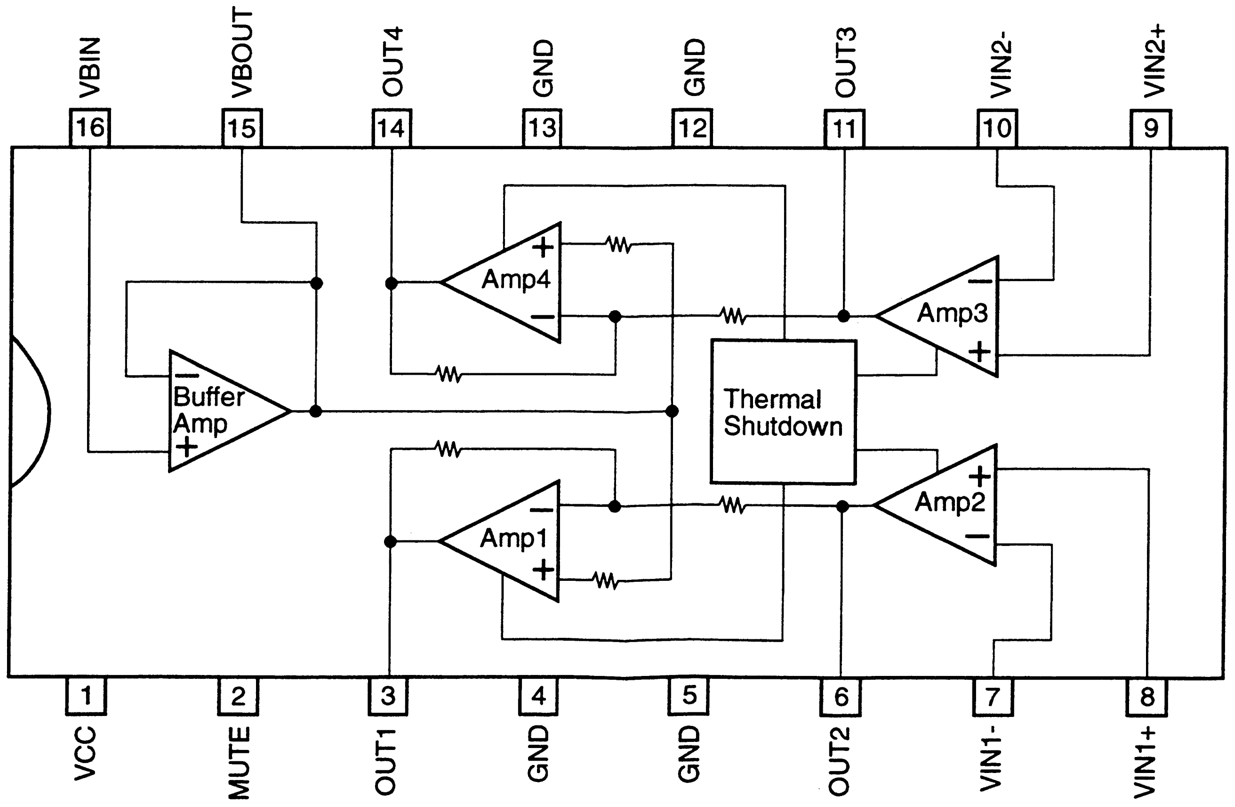
IC BLOCK DIAGRAM

IC, NJM2244L

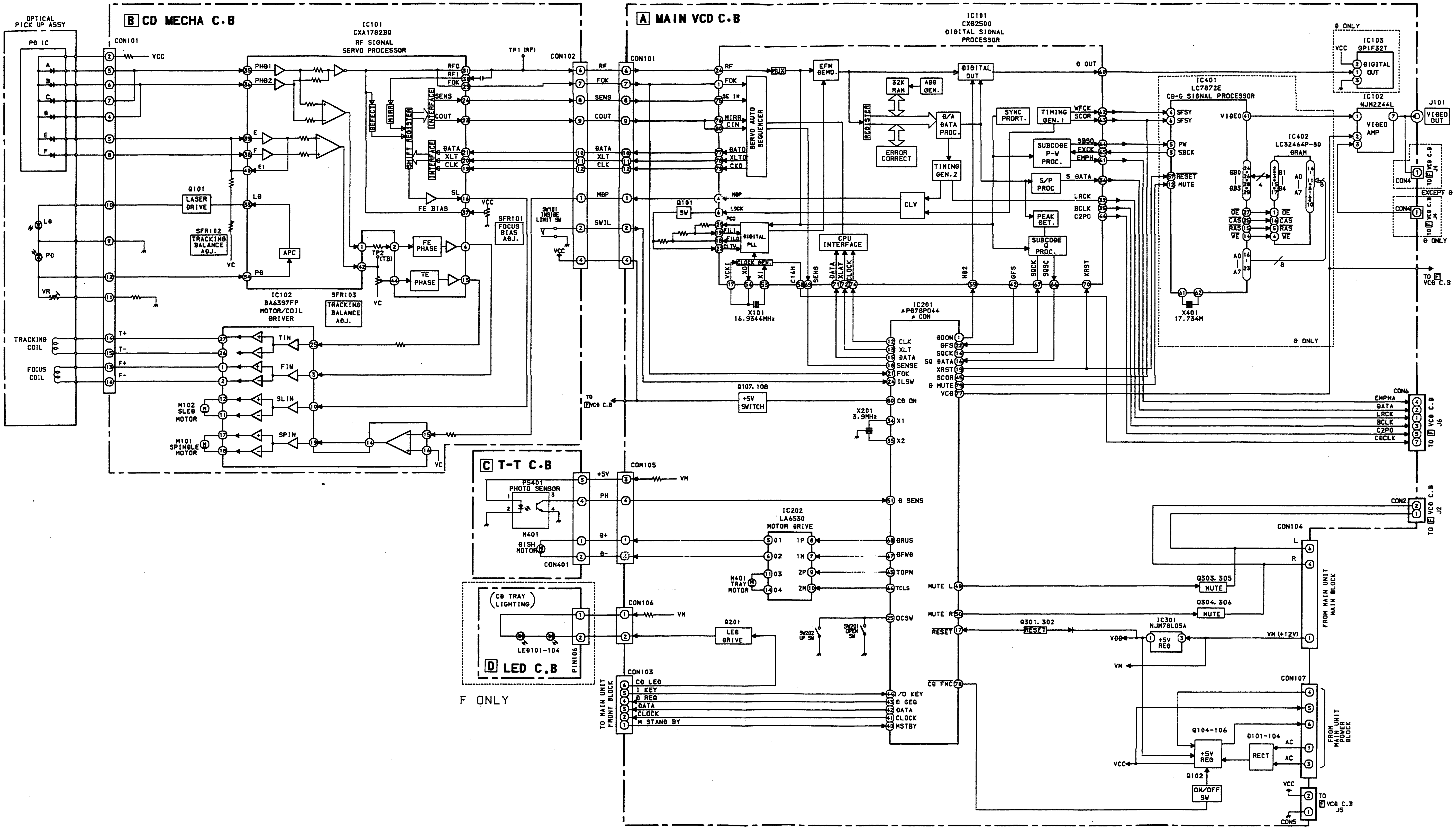

GND
Vout
V+
Vin3 (Mute)
8
7
6
5
75 Ω
DRIVER
BIAS
1
2
3
4
Vin1
SW1
Vin2
SW2

SW1	SW2	OUTPUT SIGNAL
L	L	Vin1
H	L	Vin2
L/H	H	Vin3

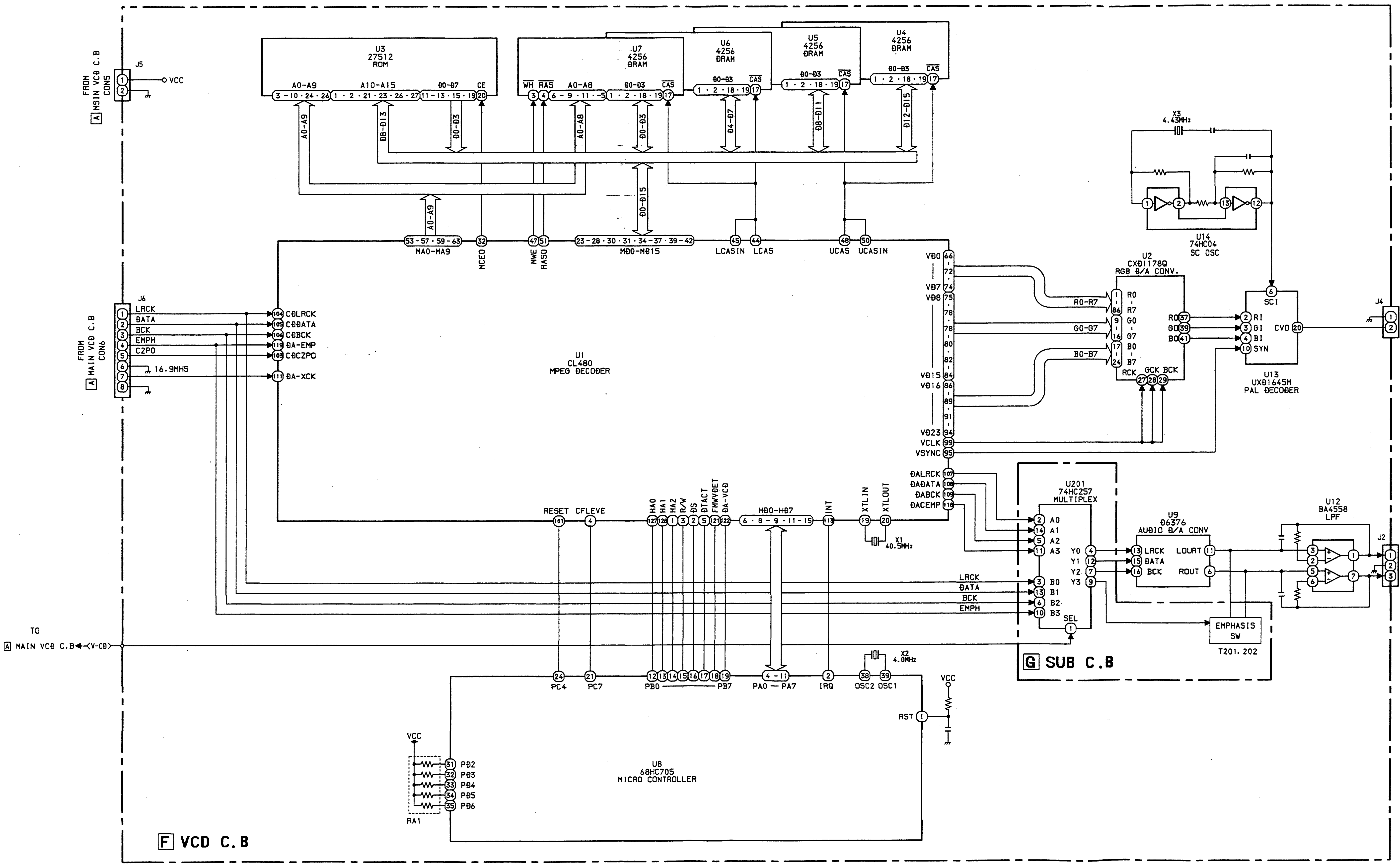
IC, LA6530


VBIN
VBOUT
OUT4
GND
GND
OUT3
VIN2-
VIN2+
16
15
14
13
12
11
10
9
Amp4
Amp3
Buffer Amp
Thermal Shutdown
Amp1
Amp2
1
2
3
4
5
6
7
8
VCC
MUTE
OUT1
GND
GND
OUT2
VIN1-
VIN1+

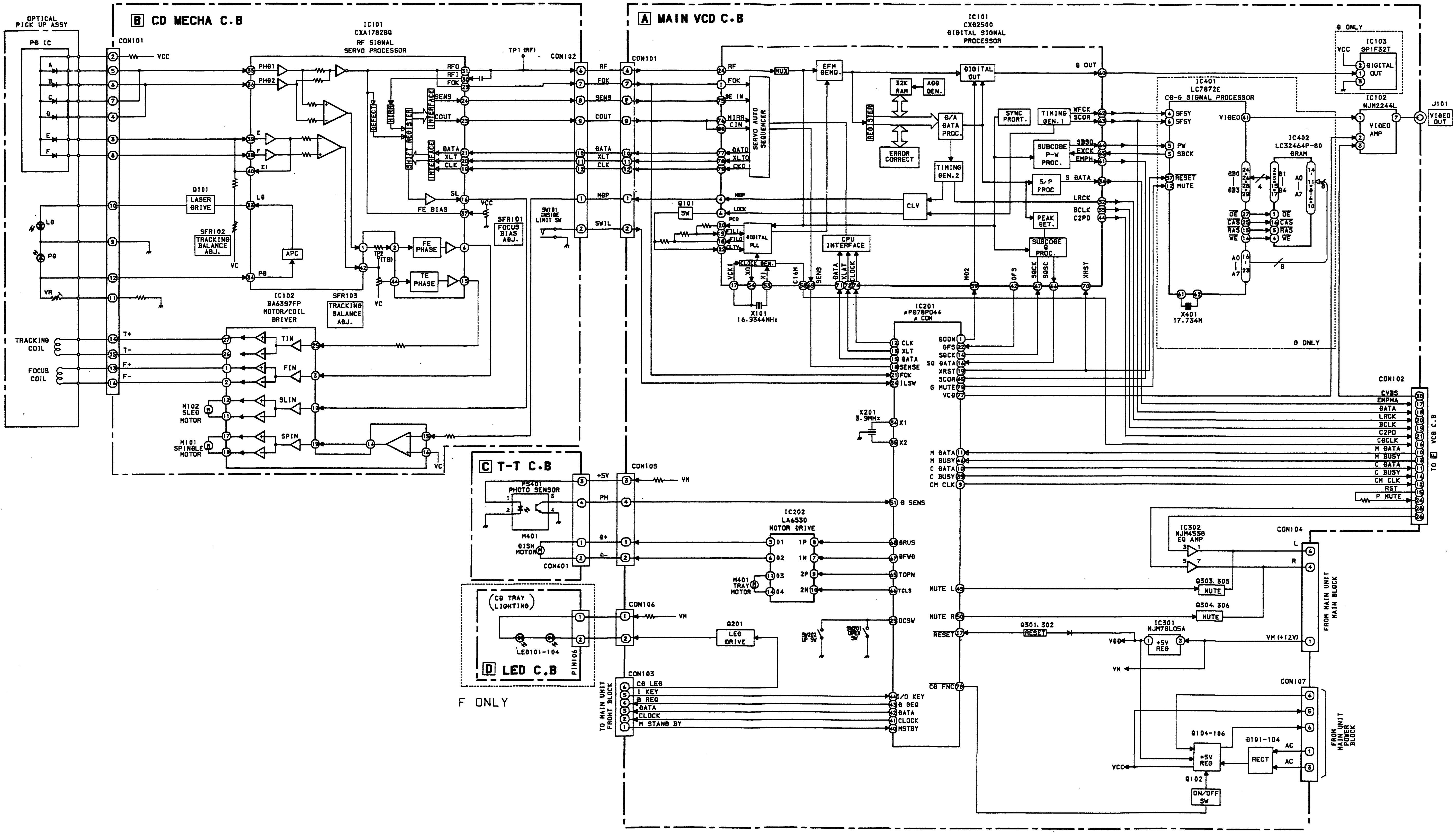
BLOCK DIAGRAM-1 (V3L: MAIN VCD ／ CD MECHA)


OPTICAL PICK UP ASSY
PD IC
B CD MECHA C.B
CON101
IC101 CXA1782BQ RF SIGNAL SERVO PROCESSOR
TP1 (RF)
CON102
Q101 LASER DRIVE
SFR102 TRACKING BALANCE ADJ.
APC
IC102 BA6397FP MOTOR/COIL DRIVER
SFR103 TRACKING BALANCE ADJ.
SFR101 FOCUS BIAS ADJ.
FE PHASE
TE PHASE
FE BIAS
SW101 INSIDE LIMIT SW
TRACKING COIL
FOCUS COIL
M102 SLED MOTOR
M101 SPINDLE MOTOR
TIN
FIN
SLIN
SPIN
A MAIN VCD C.B
CON101
IC101 CXD2500 DIGITAL SIGNAL PROCESSOR
SERVO AUTO SEQUENCER
EFM DEMO.
32K RAM
ADD GEN.
ERROR CORRECT
D/A DATA PROC.
DIGITAL OUT
SYNC PROT.
TIMING GEN.1
TIMING GEN.2
SUBCODE P-W PROC.
S/P PROC
PEAK DET.
SUBCODE Q PROC.
CLV
DIGITAL PLL
CPU INTERFACE
CLOCK GEN.
X101 16.9344MHz
Q101 SW
Q107, 108 +5V SWITCH
IC201 μPD78P044 COM
X201 3.9MHz
IC401 LC7872E CD-G SIGNAL PROCESSOR
IC402 LC32464P-80 DRAM
X401 17.734M
D ONLY
IC103 GP1F32T DIGITAL OUT
IC102 NJM2244L VIDEO AMP
J101 VIDEO OUT
CON4 TO E VCD C.B J4
EXCEPT D
D ONLY
TO E VCD C.B
CON6 TO E VCD C.B J6
EMPHA
DATA
LRCK
BCLK
C2PO
CDCLK
CON2 TO E VCD C.B J2
C T-T C.B
PS401 PHOTO SENSOR
M401 DISH MOTOR
CON401
CON105
IC202 LA6530 MOTOR DRIVE
M401 TRAY MOTOR
SW202 UP SW
SW201 OPEN SW
D LED C.B
CD TRAY LIGHTING
LED101-104
PIN106
F ONLY
CON106
Q201 LED DRIVE
CON103
TO MAIN UNIT FRONT BLOCK
CD LED
I KEY
D REQ
DATA
CLOCK
M STAND BY
CON104
FROM MAIN UNIT MAIN BLOCK
Q303, 305 MUTE
Q304, 306 MUTE
Q301, 302 RESET
IC301 NJM78L05A +5V REG
VM (+12V)
CON107
FROM MAIN UNIT POWER BLOCK
Q104-106 +5V REG
D101-104 RECT
Q102 ON/OFF SW
TO E VCD C.B J5
CON5

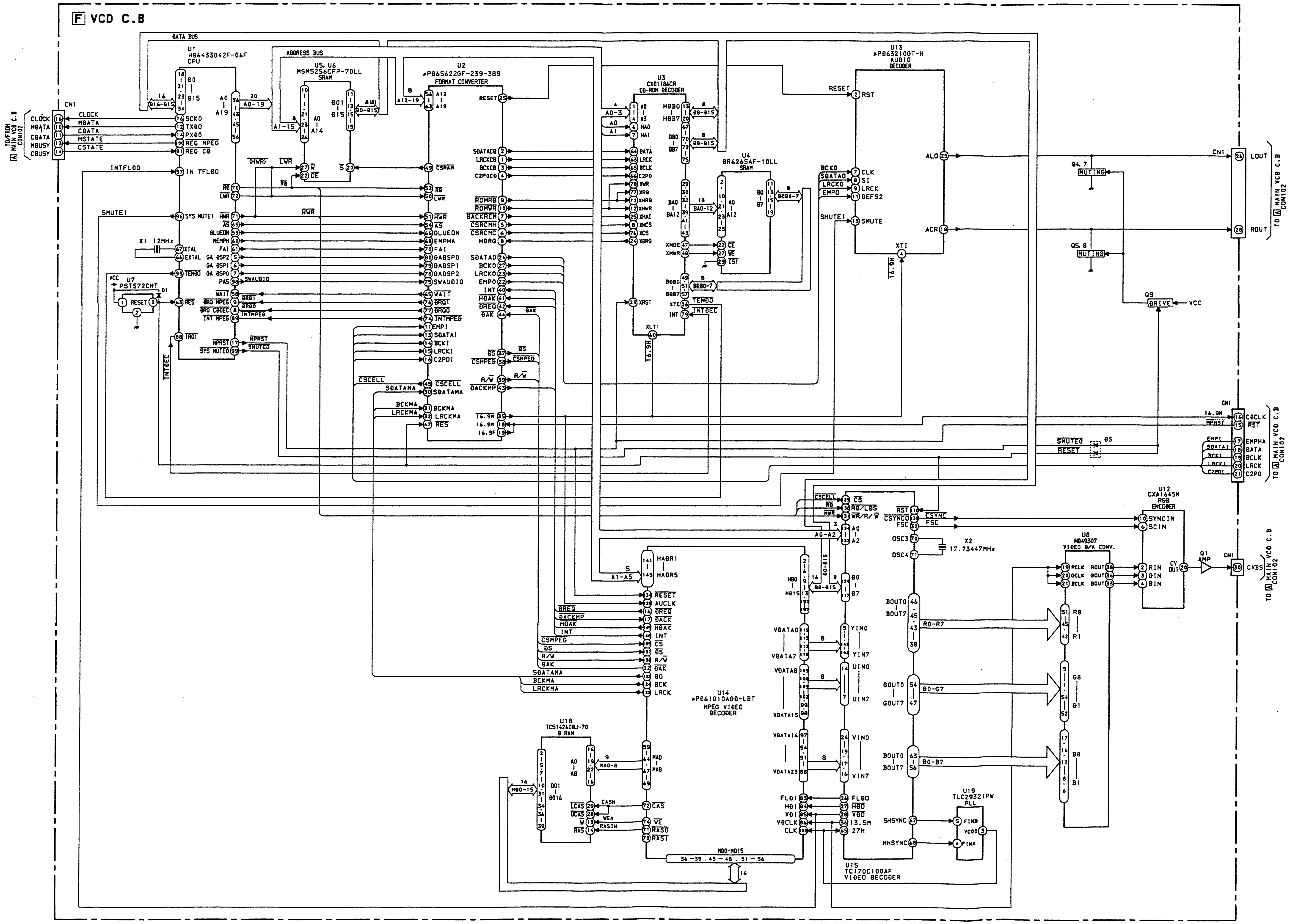
BLOCK DIAGRAM-2 (V3L: VCD)


FROM A MAIN VCD C.B CON5
J5
VCC
U3 27512 ROM
A0-A9
A10-A15
D0-D7
CE
U7 4256 DRAM
WH
RAS
A0-A8
D0-D3
CAS
U6 4256 DRAM
U5 4256 DRAM
U4 4256 DRAM
D4-D7
D8-D11
D12-D15
D8-D13
D0-D15
X3 4.43MHz
U14 74HC04 SC OSC
MA0-MA9
MCED
MWE
RASO
MD0-MD15
LCASIN
LCAS
UCAS
UCASIN
FROM A MAIN VCD C.B CON6
J6
LRCK
DATA
BCK
EMPH
C2PO
16.9MHS
CDLRCK
CDDATA
CDBCK
DA-EMP
CDCZPO
DA-XCK
U1 CL480 MPEG DECODER
VD0
VD7
VD8
VD15
VD16
VD23
VCLK
VSYNC
U2 CXD1178Q RGB D/A CONV.
R0-R7
G0-G7
B0-B7
RCK GCK BCK
RO GO BO
U13 UXD1645M PAL DECODER
SCI
RI
GI
BI
SYN
CVO
J4
TO A MAIN VCD C.B CON4
DALRCK
DADATA
DABCK
DACEMP
U201 74HC257 MULTIPLEX
A0 A1 A2 A3
B0 B1 B2 B3
Y0 Y1 Y2 Y3
SEL
U9 D6376 AUDIO D/A CONV
LRCK DATA BCK
LOURT ROUT
U12 BA4558 LPF
J2
TO A MAIN VCD C.B CON2
EMPHASIS SW
T201, 202
G SUB C.B
RESET CFLEVE
HA0 HA1 HA2 R/W DS DTACT FMWVDET DA-VCD
HD0-HD7
INT
XTLIN XTLOUT
X1 40.5MHz
TO A MAIN VCD C.B ←(V-CD)
PC4 PC7
PB0 — PB7
PA0 — PA7
IRQ
OSC2 OSC1
X2 4.0MHz
VCC
RST
VCC
PD2 PD3 PD4 PD5 PD6
RA1
U8 68HC705 MICRO CONTROLLER
F VCD C.B

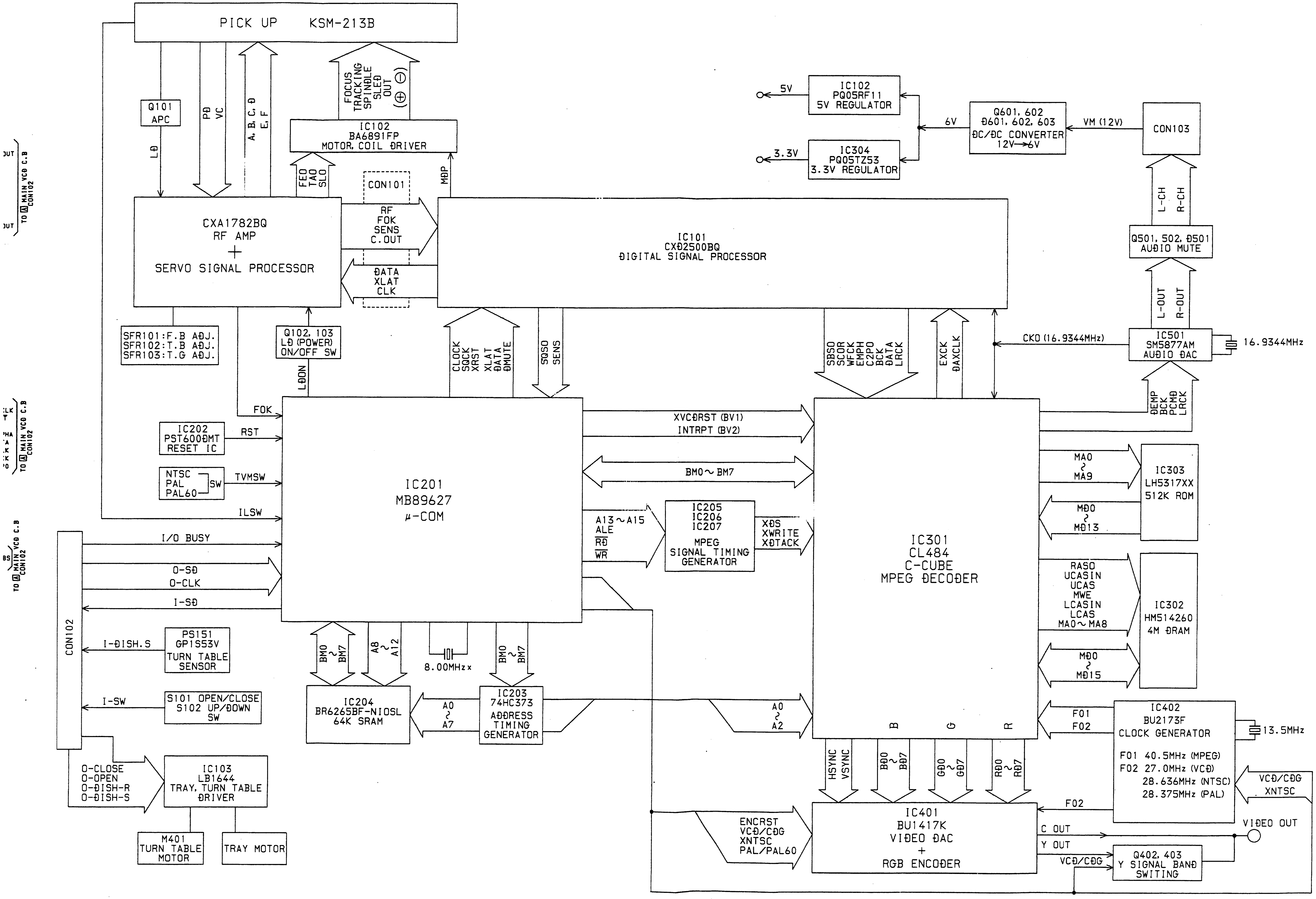
BLOCK DIAGRAM-3 (V4L: MAIN VCD ∕ CD MECHA)


B CD MECHA C.B
A MAIN VCD C.B
C T-T C.B
D LED C.B
OPTICAL PICK UP ASSY
PD IC
CON101
CON102
CON103
CON104
CON105
CON106
CON107
CON401
PIN106
IC101 CXA1782BQ RF SIGNAL SERVO PROCESSOR
IC101 CXD2500 DIGITAL SIGNAL PROCESSOR
IC102 BA6397FP MOTOR/COIL DRIVER
IC102 NJM2244L
IC103 GP1F32T
IC201 μPD78P044 μ COM
IC202 LA6530 MOTOR DRIVE
IC301 NJM78L05A
IC302 NJM4558 EQ AMP
IC401 LC7872E CD-G SIGNAL PROCESSOR
IC402 LC32464P-80 DRAM
LASER DRIVE
TRACKING BALANCE ADJ.
FOCUS BIAS ADJ.
FE PHASE
TE PHASE
FE BIAS
APC
SFR101
SFR102
SFR103
TRACKING COIL
FOCUS COIL
M102 SLED MOTOR
M101 SPINDLE MOTOR
TIN
FIN
SLIN
SPIN
SW101 INSIDE LIMIT SW
TP1 (RF)
TP2 (TE)
EFM DEMO.
MUX
32K RAM
ADD GEN.
ERROR CORRECT
D/A DATA PROC.
DIGITAL OUT
SYNC PROTT.
TIMING GEN. 1
TIMING GEN. 2
SUBCODE P-W PROC.
SUBCODE Q PROC.
S/P PROC
PEAK DET.
CLV
DIGITAL PLL
CLOCK GEN.
CPU INTERFACE
SERVO AUTO SEQUENCER
REGISTER
SHIFT REGISTER
INTERFACE
DEFECT
MIRR
X101 16.9344MHz
X201 3.9MHz
X401 17.734M
D ONLY
VIDEO AMP
J101 VIDEO OUT
PS401 PHOTO SENSOR
M401 DISH MOTOR
M401 TRAY MOTOR
CD TRAY LIGHTING
LED101-104
LED DRIVE
Q101
Q201
Q102
Q104-106
D101-104
Q301, 302
Q303, 305 MUTE
Q304, 306 MUTE
+5V REG
RECT
ON/OFF SW
SW202 UP SW
SW201 OPEN SW
TO MAIN UNIT FRONT BLOCK
FROM MAIN UNIT MAIN BLOCK
FROM MAIN UNIT POWER BLOCK
TO VCD C.B
F ONLY

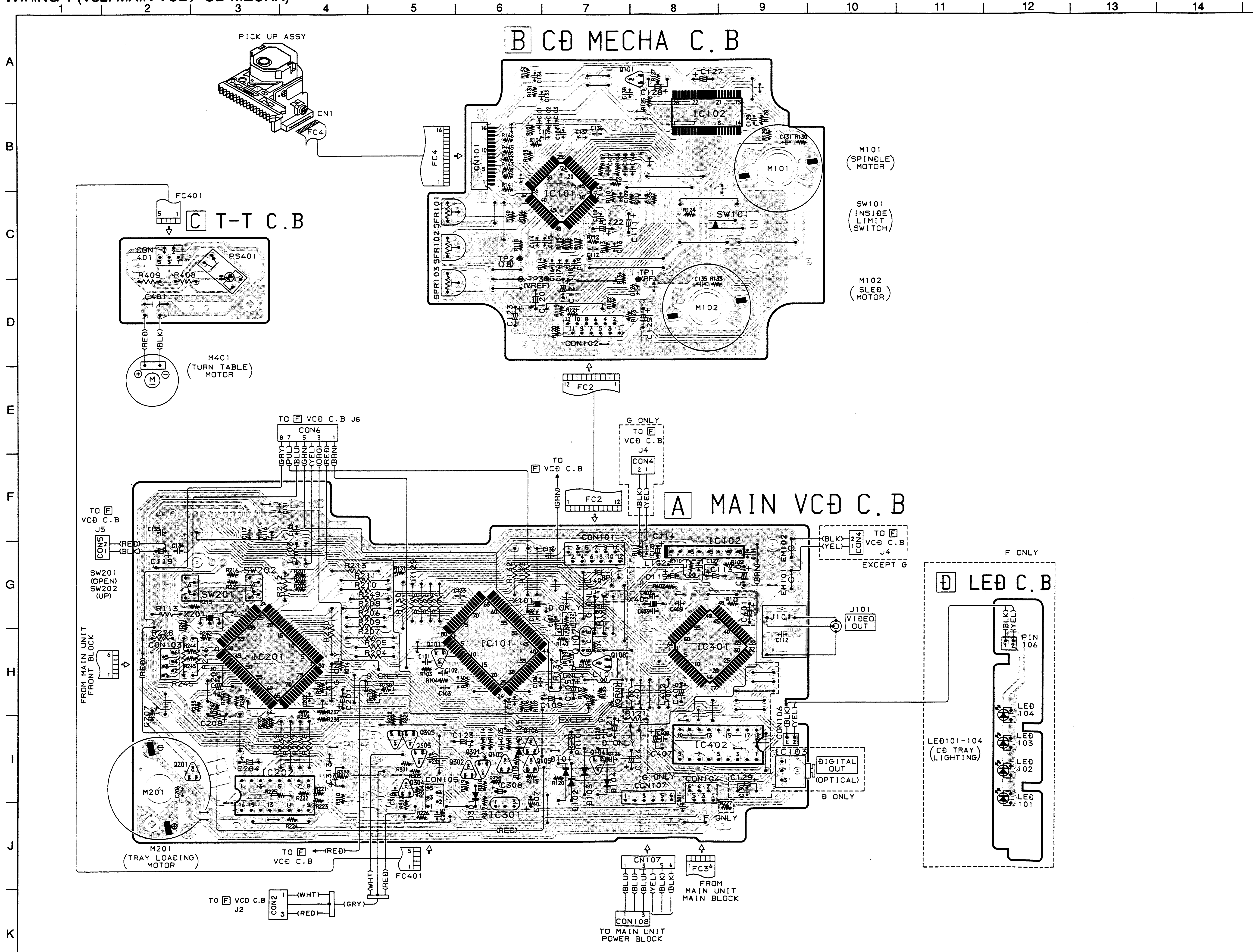
BLOCK DIAGRAM-4 (V4L: VCD)


F VCD C.B
DATA BUS
ADDRESS BUS
TO/FROM A MAIN VCD C.B CON102
CN1
CLOCK
MDATA
CDATA
MSTATE
CSTATE
CBUSY
MBUSY
INTFLOO
SMUTE1
X1 12MHz
U1
HD6433042F-06F
CPU
U5, U6
MSM5256CFP-70LL
SRAM
U2
μPD65622GF-239-3B9
FORMAT CONVERTER
U3
CXD1186CR
CD-ROM DECODER
U4
BR6265AF-10LL
SRAM
U13
μPD63210GT-H
AUDIO DECODER
U7
PST572CMT
RESET
ALO
ACR
XTI
16.9M
Q4, 7
MUTING
Q5, 8
MUTING
Q9
DRIVE
VCC
LOUT
ROUT
TO A MAIN VCD C.B CON102
CDCLK
RST
EMPHA
DATA
BCLK
LRCK
C2PO
SMUTEO
RESET
D5
U12
CXA1645M
RGB
ENCODER
SYNCIN
SCIN
RIN
GIN
BIN
CV OUT
Q1
AMP
CVBS
U8
HD49307
VIDEO D/A CONV.
X2
17.73447MHz
CSYNC
FSC
U14
μPD61010AGD-LBT
MPEG VIDEO DECODER
U18
TC5142608J-70
D RAM
MD0-MD15
U19
TLC2932IPW
PLL
U15
TC170C100AF
VIDEO DECODER
R0-R7
G0-G7
B0-B7
Y IN0
YIN7
UIN0
UIN7
VIN0
VIN7
FL00
HD0
VD0
13.5M
27M
SHSYNC
MHSYNC
FINB
FINA
VCOO

BLOCK DIAGRAM-5 (V5)


PICK UP KSM-213B
Q101 APC
LD
PD VC
A, B, C, D E, F
FOCUS TRACKING SPINDLE SLED OUT (⊕ ⊖)
IC102 BA6891FP MOTOR, COIL DRIVER
FEO TAO SLO
MDP
CON101
CXA1782BQ RF AMP + SERVO SIGNAL PROCESSOR
RF FOK SENS C.OUT
DATA XLAT CLK
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
SFR101:F.B ADJ.
SFR102:T.B ADJ.
SFR103:T.G ADJ.
Q102, 103 LD (POWER) ON/OFF SW
LDON
CLOCK SQCK XRST XLAT DATA DMUTE
SQSO SENS
SBSO SCOR WFCK EMPH C2PO BCK DATA LRCK
EXCK DAXCLK
5V
IC102 PQ05RF11 5V REGULATOR
3.3V
IC304 PQ05TZ53 3.3V REGULATOR
6V
Q601, 602 D601, 602, 603 DC/DC CONVERTER 12V→6V
VM (12V)
CON103
L-CH R-CH
Q501, 502, D501 AUDIO MUTE
L-OUT R-OUT
CKO (16.9344MHz)
IC501 SM5877AM AUDIO DAC
16.9344MHz
DEMP BCK PCMD LRCK
FOK
IC202 PST600DMT RESET IC
RST
NTSC PAL PAL60 SW
TVMSW
ILSW
IC201 MB89627 μ-COM
XVCDRST (BV1)
INTRPT (BV2)
BM0～BM7
A13～A15 ALE RD WR
IC205 IC206 IC207 MPEG SIGNAL TIMING GENERATOR
XDS XWRITE XDTACK
IC301 CL484 C-CUBE MPEG DECODER
MA0 ～ MA9
IC303 LH5317XX 512K ROM
MD0 ～ MD13
RASO UCASIN UCAS MWE LCASIN LCAS MA0～MA8
IC302 HM514260 4M DRAM
MD0 ～ MD15
I/O BUSY
O-SD
O-CLK
I-SD
CON102
I-DISH.S
PS151 GP1S53V TURN TABLE SENSOR
I-SW
S101 OPEN/CLOSE S102 UP/DOWN SW
BM0 ～ BM7
A8 ～ A12
8.00MHz x
BM0 ～ BM7
IC204 BR6265BF-NIOSL 64K SRAM
A0 ～ A7
IC203 74HC373 ADDRESS TIMING GENERATOR
A0 ～ A2
B G R
F01 F02
IC402 BU2173F CLOCK GENERATOR
F01 40.5MHz (MPEG)
F02 27.0MHz (VCD) 28.636MHz (NTSC) 28.375MHz (PAL)
13.5MHz
VCD/CDG XNTSC
O-CLOSE O-OPEN O-DISH-R O-DISH-S
IC103 LB1644 TRAY, TURN TABLE DRIVER
M401 TURN TABLE MOTOR
TRAY MOTOR
HSYNC VSYNC
BD0 ～ BD7
GD0 ～ GD7
RD0 ～ RD7
ENCRST VCD/CDG XNTSC PAL/PAL60
IC401 BU1417K VIDEO DAC + RGB ENCODER
F02
C OUT
Y OUT
VCD/CDG
VIDEO OUT
Q402, 403 Y SIGNAL BAND SWITING
TO A MAIN VCD C.B CON102

WIRING-1 (V3L: MAIN VCD／CD MECHA)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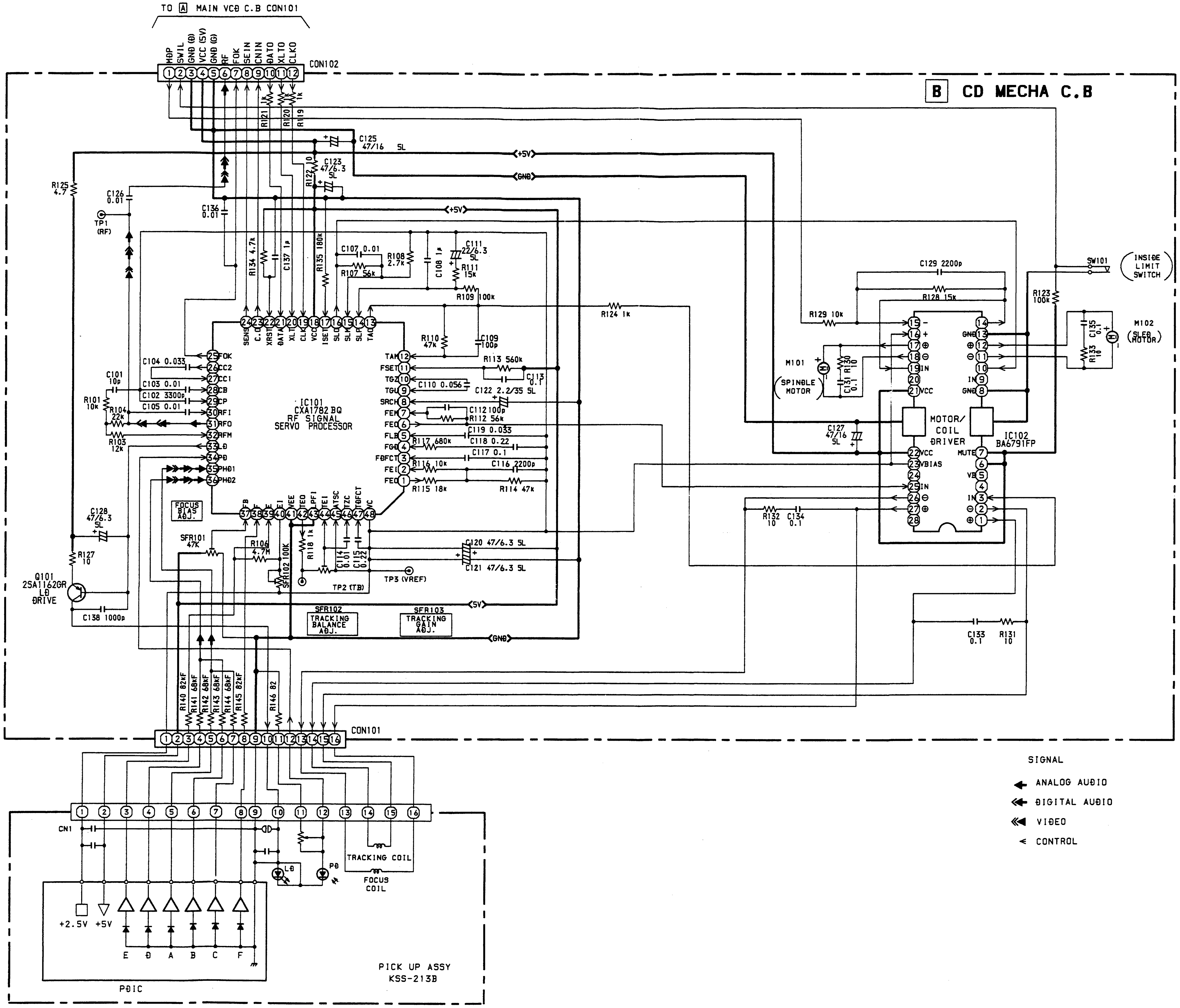
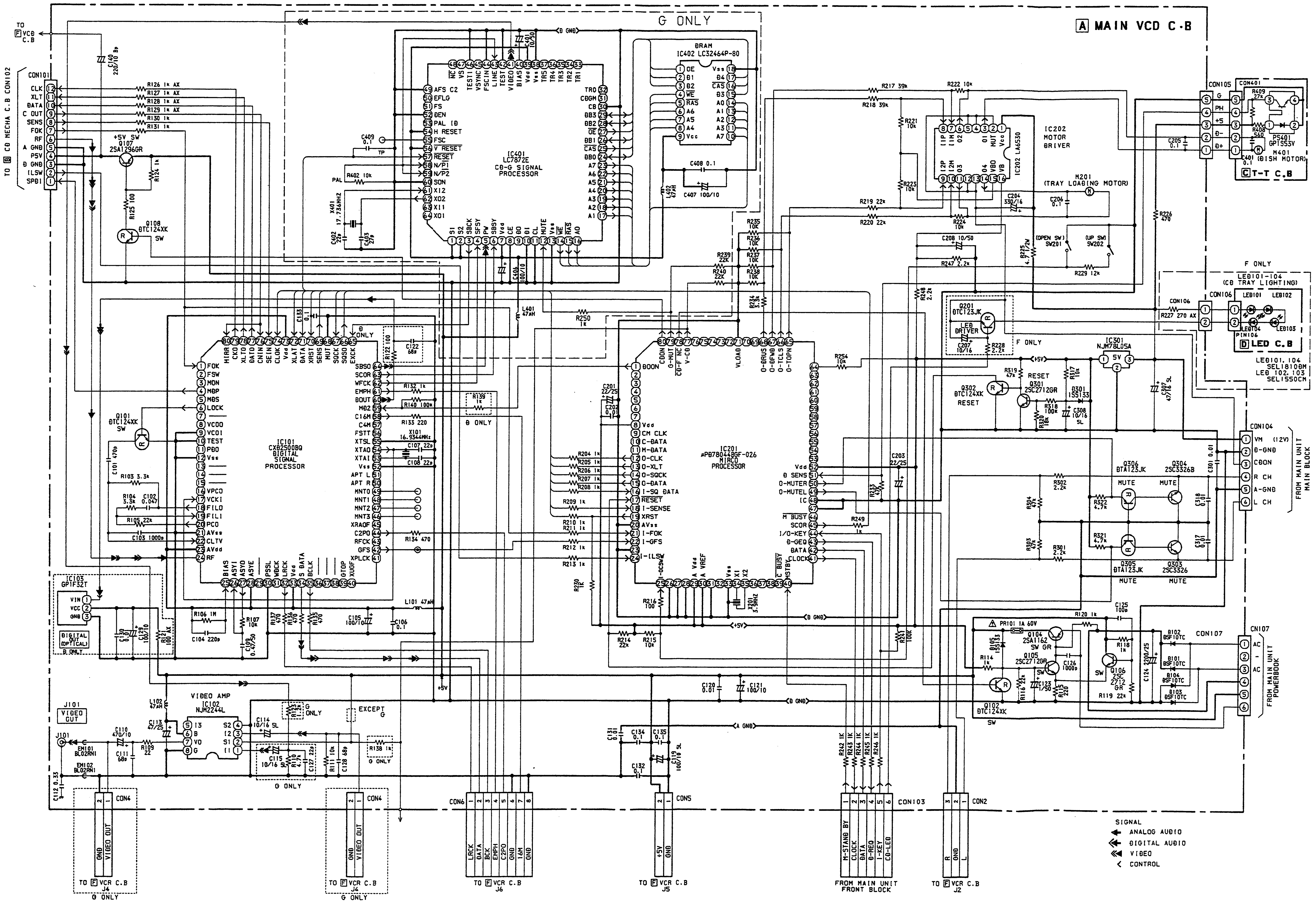
G
H
I
J
K
PICK UP ASSY
CN1
FC4
B CD MECHA C.B
CN101
IC101
IC102
SFR101
SFR102
SFR103
TP2 (TE)
TP3 (VREF)
TP1 (RF)
CON102
M101
M101 (SPINDLE MOTOR)
SW101
SW101 (INSIDE LIMIT SWITCH)
M102
M102 (SLED MOTOR)
FC2
FC401
C T-T C.B
CON401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
TO F VCD C.B J6
CON6
(GRY)
(PUL)
(BLU)
(GRN)
(YEL)
(ORG)
(RED)
(BRN)
TO F VCD C.B
(GRN)
G ONLY
TO F VCD C.B J4
CON4
(BLK)
(YEL)
A MAIN VCD C.B
TO F VCD C.B J5
CON5
SW201 (OPEN)
SW202 (UP)
SW201
SW202
CON103
FROM MAIN UNIT FRONT BLOCK
IC201
IC202
IC101
IC102
IC401
IC402
IC301
IC103
IC129
CON101
CON104
CON105
CON106
CON107
J101
J101 VIDEO OUT
DIGITAL OUT (OPTICAL)
D ONLY
F ONLY
G ONLY
EXCEPT G
TO F VCD C.B J4
CON4
EM101
EM102
M201
M201 (TRAY LOADING MOTOR)
TO F VCD C.B
(RED)
FC401
(WHT)
(RED)
TO F VCD C.B J2
CON2
(WHT)
(GRY)
(RED)
CN107
(BLU)
(BLU)
(BLU)
(YEL)
(BLK)
(BLK)
CON108
TO MAIN UNIT POWER BLOCK
FC3
FROM MAIN UNIT MAIN BLOCK
F ONLY
D LED C.B
PIN 106
(BLK)
(YEL)
LED 104
LED 103
LED 102
LED 101
LED101-104 (CD TRAY LIGHTING)

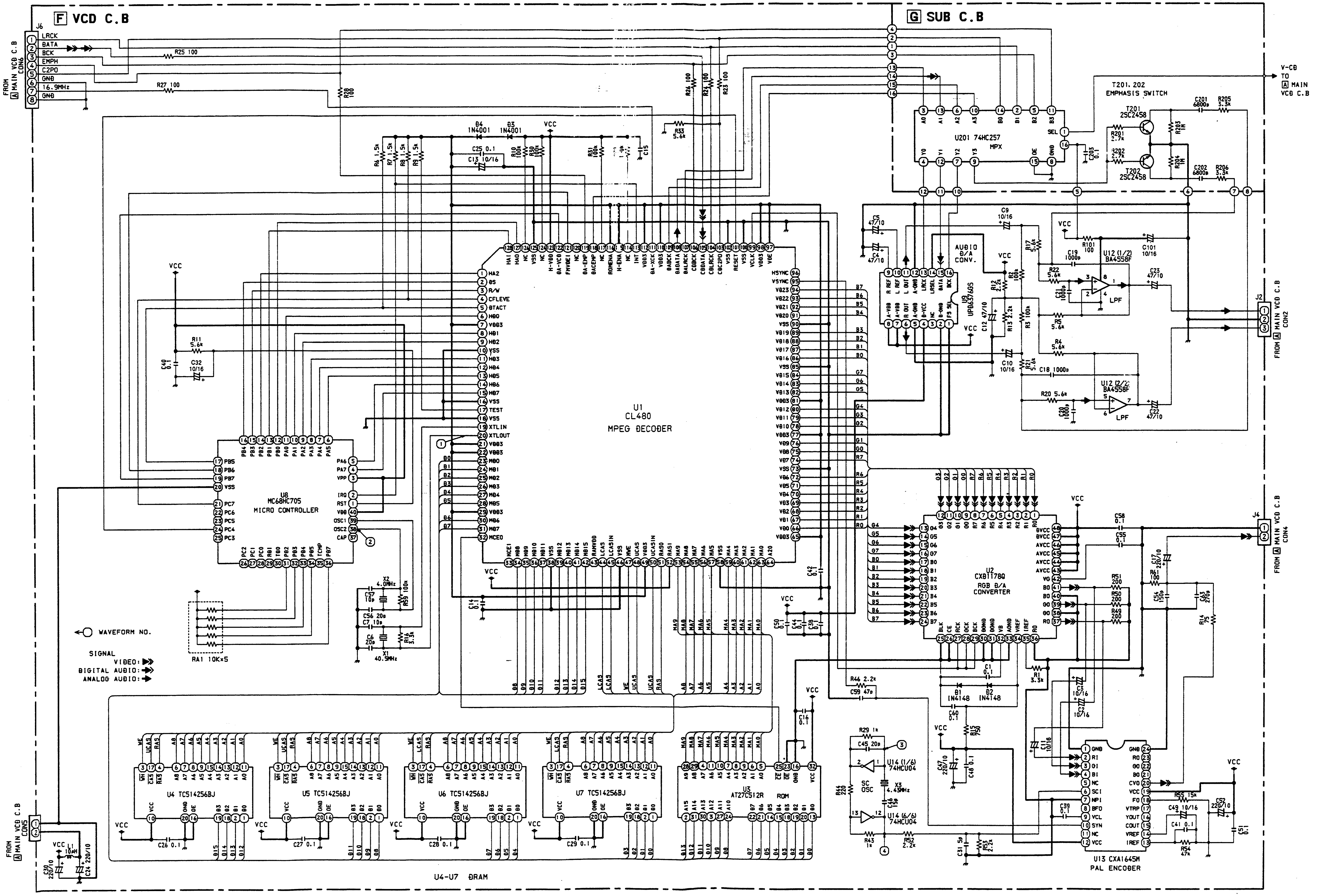
CHEMATIC DIAGRAM-1 (V3L: CD MECHA)


TO A MAIN VCD C.B CON101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
C125 47/16 5L
+5V
GND
C123 47/6.3 5L
R122 10
R121 1k
R120 1k
R119 1k
R125 4.7
C126 0.01
TP1 (RF)
C136 0.01
R134 4.7k
C137 1μ
R135 180k
C107 0.01
R107 56k
R108 2.7k
C108 1μ
C111 22/6.3 5L
R111 15k
R109 100k
R124 1k
C129 2200p
R128 15k
R129 10k
R123 100k
SW101
INSIDE LIMIT SWITCH
M102 (SLED MOTOR)
C135 0.1
R133 10
M101 (SPINDLE MOTOR)
R130 10
C131 0.1
SENS
C.OUT
XRST
DATA
XLT
CLK
VCC
ISET
SLO
SLM
SLP
TAO
FOK
CC2
CC1
CB
CP
RFI
RFO
RFM
LD
PD
PHD1
PHD2
TAM
FSET
TGZ
TGU
SRCH
FEM
FEO
FLB
FGD
FBFCT
FEI
FEO
C104 0.033
C103 0.01
C102 3300p
C105 0.01
C101 10p
R101 10k
R104 22k
R103 12k
IC101 CXA1782BQ RF SIGNAL SERVO PROCESSOR
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.056
C122 2.2/35 5L
C112 100p
R112 56k
C119 0.033
R117 680k
C118 0.22
C117 0.1
R116 10k
C116 2200p
R115 18k
R114 47k
C128 47/6.3 5L
FOCUS BIAS ADJ.
FB
FE
TE
VEE
TEO
LPFI
TEI
ATSC
TZC
TDFCT
VC
SFR101 47K
R106 4.7M
SFR102 100K
R118 1k
C114 0.01
C115 0.22
C120 47/6.3 5L
C121 47/6.3 5L
TP3 (VREF)
TP2 (TE)
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
5V
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
GND
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102 BA6791FP
GND
IN
VCC
VBIAS
MUTE
VB
R132 10
C134 0.1
C133 0.1
R131 10
R140 82kF
R141 68kF
R142 68kF
R143 68kF
R144 68kF
R145 82kF
R146 82
CON101
CN1
TRACKING COIL
FOCUS COIL
LD
PD
+2.5V
+5V
E
D
A
B
C
F
PDIC
PICK UP ASSY KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

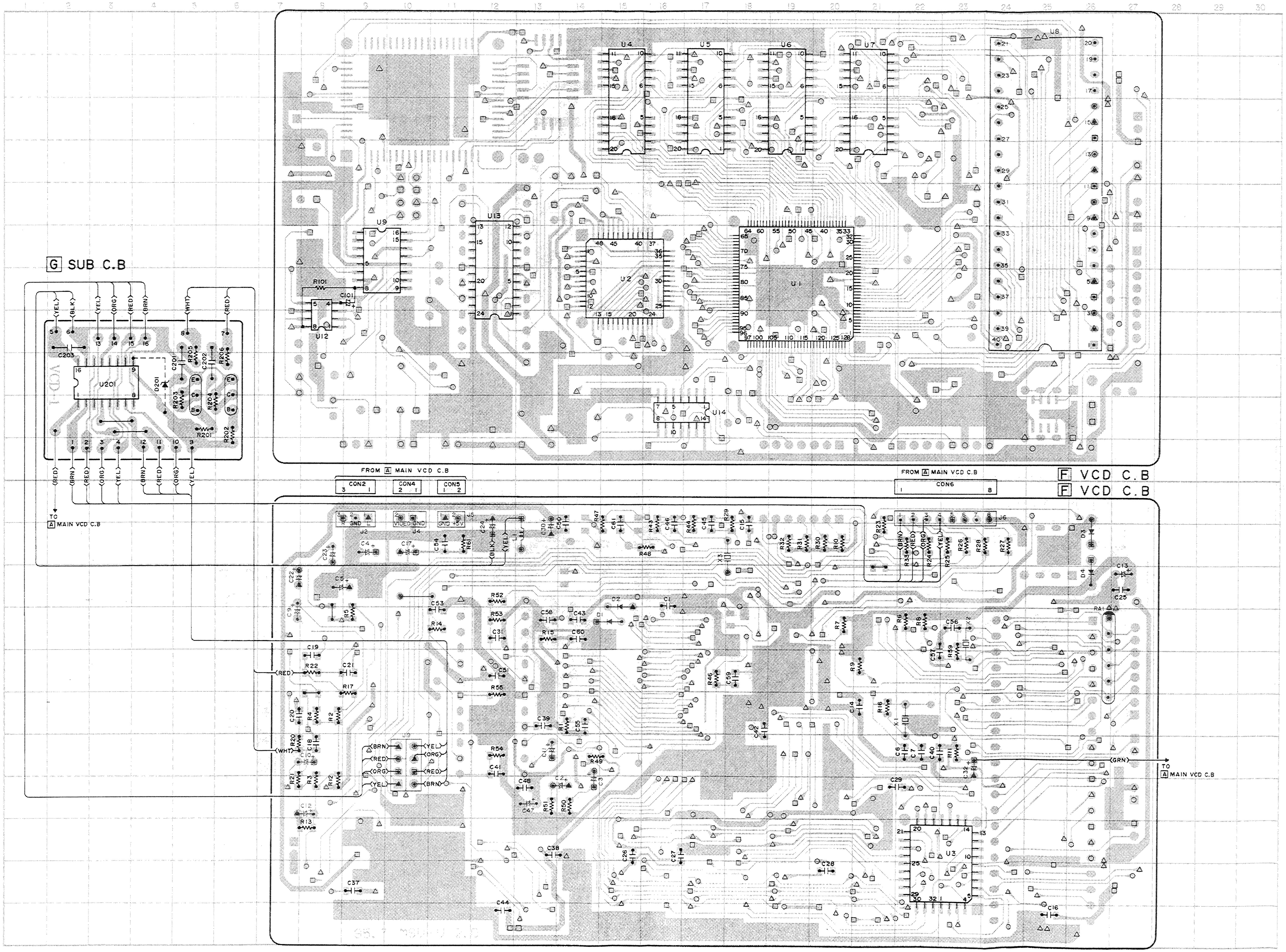
SCHEMATIC DIAGRAM-2 (V3L: MAIN VCD)

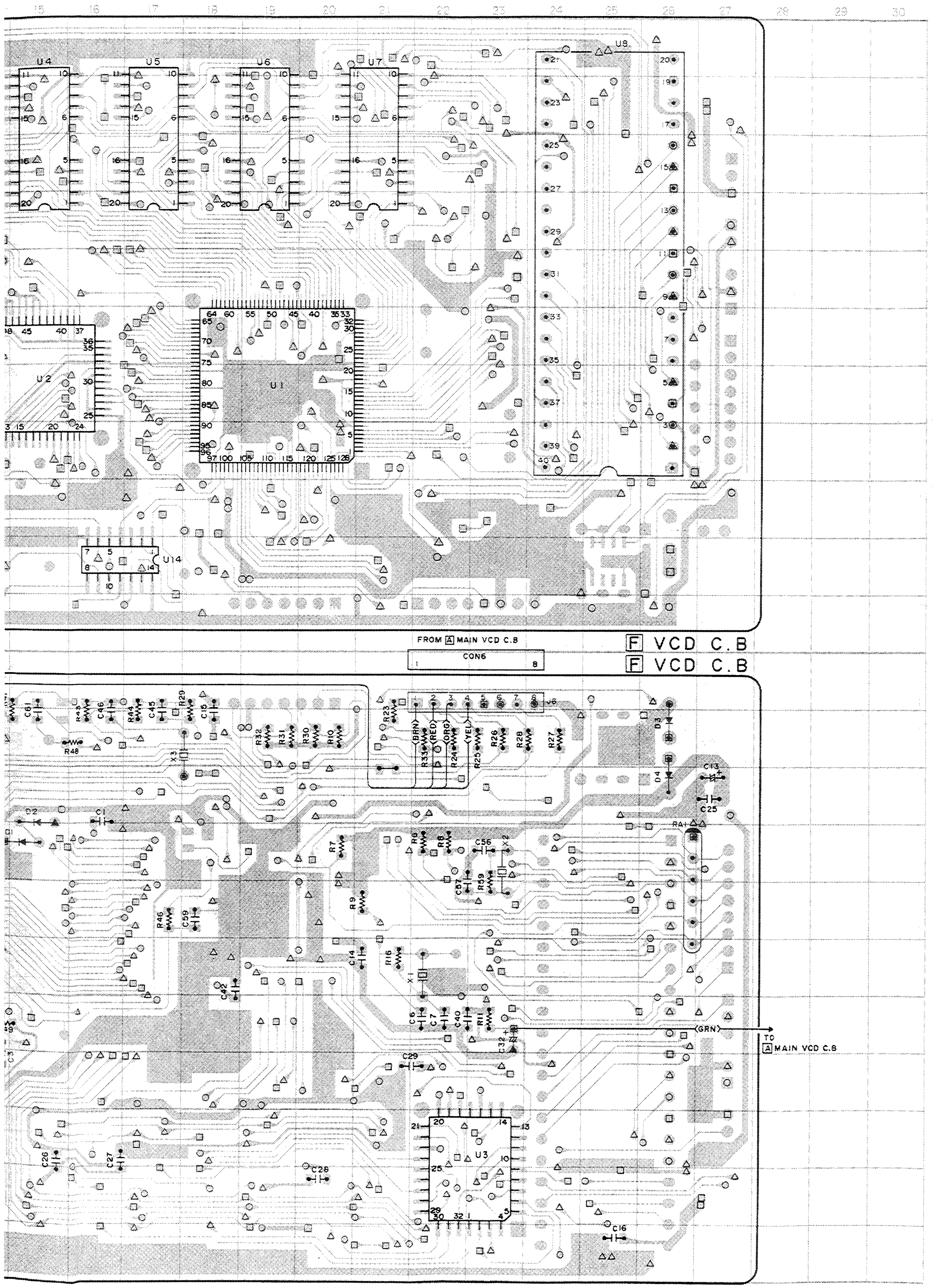

A MAIN VCD C·B
G ONLY
TO F VCD C.B
TO B CD MECHA C.B CON102
CON101
CLK
XLT
DATA
C OUT
SENS
FOK
RF
A GND
PSV
D GND
ILSW
SPDI
Q107 2SA1296GR
Q108 DTC124XK
IC401 LC7872E CD-G SIGNAL PROCESSOR
X401 17.734MHz
DRAM IC402 LC32464P-80
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
Q101 DTC124XK SW
IC103 GP1F32T
DIGITAL OUT (OPTICAL)
D ONLY
VIDEO AMP IC102 NJM2244L
J101 VIDEO OUT
EXCEPT G
IC201 µPD78044BGF-026 MIRCO PROCESSOR
Y201 3.9MHz
IC202 LA6530 MOTOR DRIVER
M201 (TRAY LOADING MOTOR)
(OPEN SW) SW201
(UP SW) SW202
CON105
CON401
PS401 GP1S53V
M401 (DISH MOTOR)
C T-T C.B
F ONLY
LED101-104 (CD TRAY LIGHTING)
CON106
D LED C.B
LED101, 104 SEL1810OM
LED 102, 103 SEL1550CM
Q201 DTC123JK
LED DRIVER
IC301 NJM78L05A
Q302 DTC124XK RESET
Q301 2SC2712GR
D301 1SS133
CON104
VM (12V)
D-GND
CDON
R CH
A-GND
L CH
FROM MAIN UNIT MAIN BLOCK
Q306 DTA123JK MUTE
Q304 2SC3326B MUTE
Q305 DTA123JK MUTE
Q303 2SC3326 MUTE
PR101 1A 60V
Q104 2SA1162 SW GR
Q105 2SC2712GR
Q106 2SC2712 GR
Q102 DTC124XK SW
D101-D104 BSF10TC
CN107
CON107
FROM MAIN UNIT POWERBOOK
CON4
GND
VIDEO OUT
TO F VCR C.B J4 G ONLY
CON6
LRCK
DATA
BCK
EMPH
C2PO
GND
16M
GND
TO F VCR C.B J6
CON5
+5V
GND
TO F VCR C.B J5
CON103
M-STAND BY
CLOCK
DATA
D-REQ
I-KEY
CD-LED
FROM MAIN UNIT FRONT BLOCK
CON2
R
GND
L
TO F VCR C.B J2
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

SCHEMATIC DIAGRAM-3 (V3L: VCD)


F VCD C.B
G SUB C.B
FROM A MAIN VCD C.B CON6
J6
LRCK
DATA
BCK
EMPH
C2PO
GND
16.9MHz
R25 100
R27 100
R28 100
R26 100
R24 100
R23 100
D4 1N4001
D3 1N4001
VCC
C25 0.1
C13 10/16
R33 5.6k
U1
CL480
MPEG DECODER
U8
MC68HC705
MICRO CONTROLLER
R11 5.6k
C40 0.1
C32 10/16
X2 4.0MHz
C57 10p
C56 20p
C7 10p
C6 20p
X1 40.5MHz
R59 100k
R16 3.3k
RA1 10K×5
WAVEFORM NO.
SIGNAL
VIDEO:
DIGITAL AUDIO:
ANALOG AUDIO:
U201 74HC257
MPX
T201, 202
EMPHASIS SWITCH
T201 2SC2458
T202 2SC2458
R201 2.7k
R202 2.7k
R203 1M
R204 1M
C201 6800p
C202 6800p
R205 3.3k
R206 3.3k
C203 0.1
V-CB
TO
A MAIN VCB C.B
AUDIO D/A CONV.
U9 UPD63705
C5 47/10
C4 47/10
C9 10/16
C12 47/10
C10 10/16
C18 1000p
C19 1000p
C21 1000p
C20 1000p
R12 2.2k
R13 2.2k
R2 100k
R3 100k
R17 5.6k
R22 5.6k
R5 5.6k
R4 5.6k
R21 5.6k
R20 5.6k
R101 100
C101 10/16
C23 47/10
C22 47/10
U12 (1/2) BA4558F
U12 (2/2) BA4558F
LPF
J2
FROM A MAIN VCD C.B CON2
U2
CXD1178Q
RGB D/A
CONVERTER
C58 0.1
C55 0.1
C17 220/10
R61 100
C54 150p
C53 270p
R51 200
R50 200
R49 200
R14 75
J4
FROM A MAIN VCD C.B CON4
C42 0.1
C14 0.1
C50 0.1
C44 0.1
C38 0.1
C1 0.1
D1 1N4148
D2 1N4148
R1 3.3k
R46 2.2k
C59 47p
C60 0.1
R15 750
C16 0.1
C3 10/16
C2 10/16
C11 10/16
C47 220/10
C48 0.1
R29 1k
C45 20p
U14 (1/6) 74HCU04
SC OSC
X3 4.43MHz
C46 15p
U14 (6/6) 74HCU04
R44 220
R43 1k
R52 2.2k
C31 5p
R53 2.2k
U13 CXA1645M
PAL ENCODER
C39 0.1
R55 15k
C49 10/16
C52 220/10
C41 0.1
R54 47k
C51 0.1
U4 TC514256BJ
U5 TC514256BJ
U6 TC514256BJ
U7 TC514256BJ
U4-U7 DRAM
U3 AT27C512R ROM
C26 0.1
C27 0.1
C28 0.1
C29 0.1
FROM A MAIN VCD C.B CON5
L1 10μH
C30 220/10
C24 220/10

WIRING-2 (V3L: VCD)


G SUB C.B
VCD-1
U201
C203
C201
C202
D201
R201
R202
R203
R204
R205
R206
(YEL)
(BLK)
(ORG)
(RED)
(BRN)
(WHT)
TO
A MAIN VCD C.B
U1
U2
U4
U5
U6
U7
U8
U9
U12
U13
U14
R101
C101
FROM A MAIN VCD C.B
CON2
CON4
CON5
CON6
F VCD C.B
F VCD C.B
J2
J4
J5
J6
GND
VIDEO GND
U3
X1
X2
X3
(GRN)
TO
A MAIN VCD C.B


15
16
17
18
19
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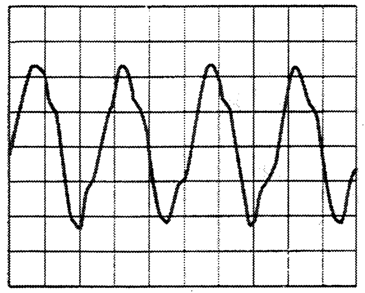
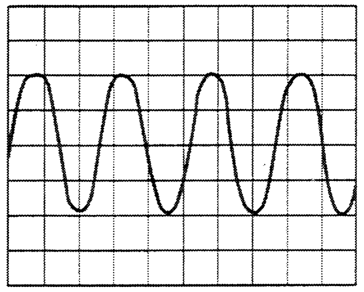
21
22
23
24
25
26
27
28
29
30
U4
U5
U6
U7
U8
U1
U2
U14
FROM A MAIN VCD C.B
CON6
F VCD C.B
F VCD C.B
(BRN)
(RED)
(ORG)
(YEL)
X1
X2
X3
RA1
C13
C25
C29
C26
C27
C28
C16
U3
(GRN)
TO A MAIN VCD C.B

WAVE FORM

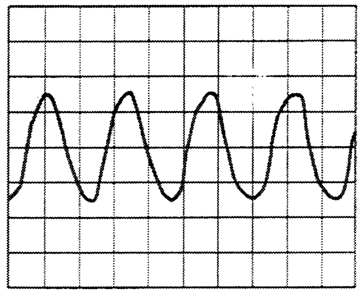
① U1 Pin ⑳ (XLT OUT) VOLT/DIV: 1V TIME/DIV: 10nS



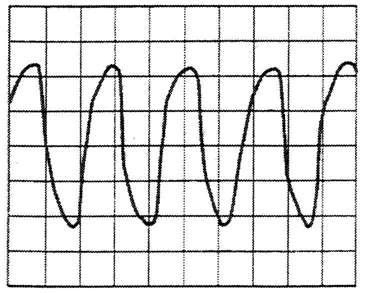
② U8 Pin ㊳ (OSC2) VOLT/DIV: 1V TIME/DIV: 100nS



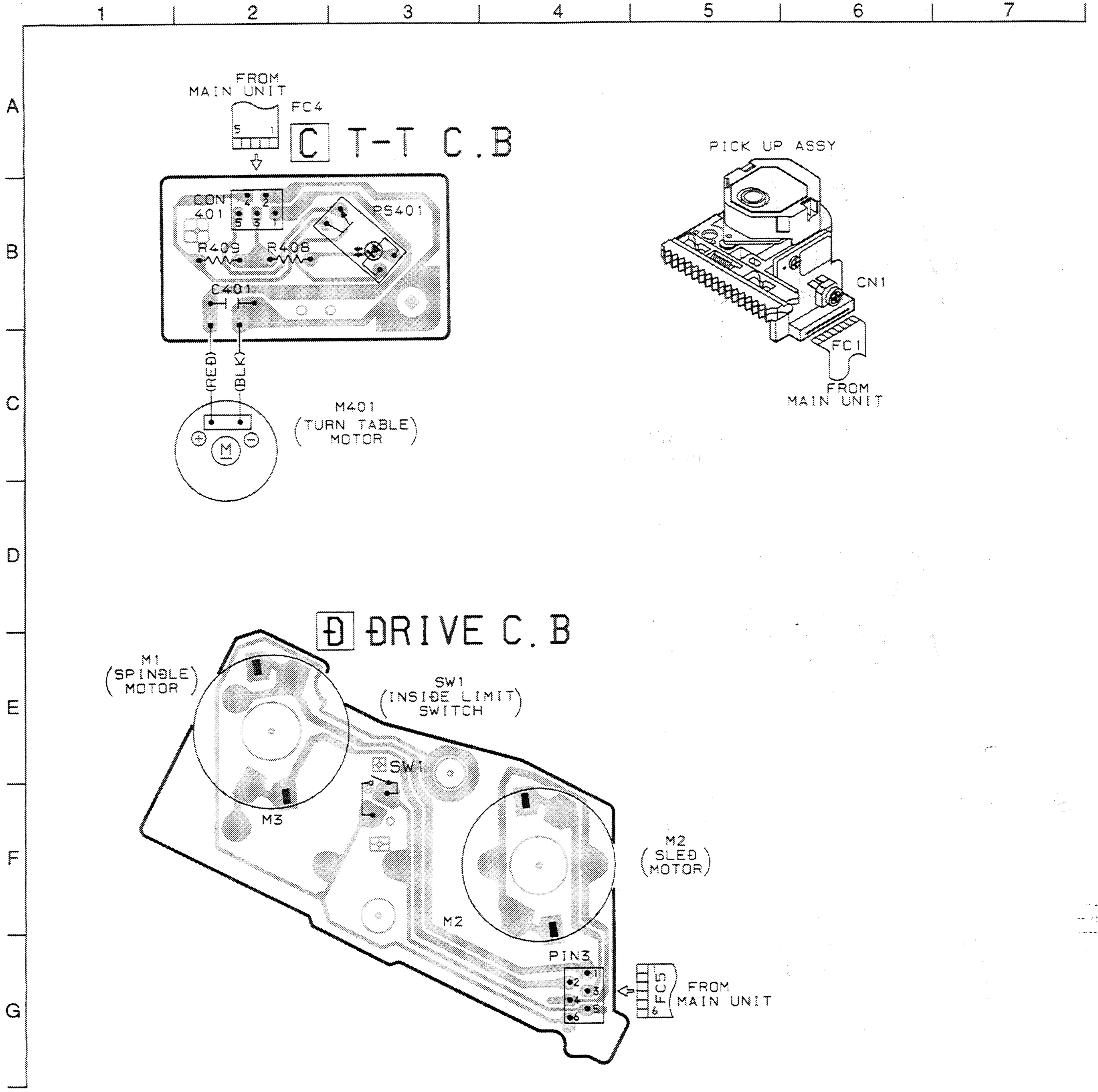
③ U14 Pin ① VOLT/DIV: 1V TIME/DIV: 100nS



④ U14 Pin ⑫ VOLT/DIV: 1V TIME/DIV: 100nS



WIRING-3 (WR)


1
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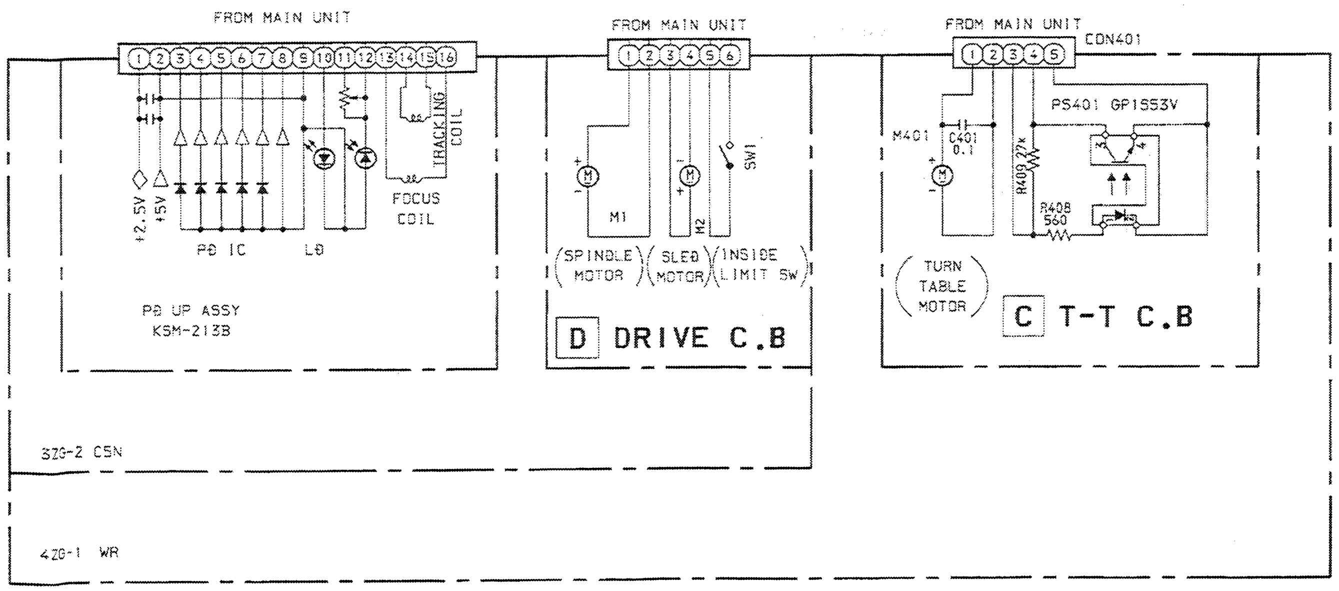
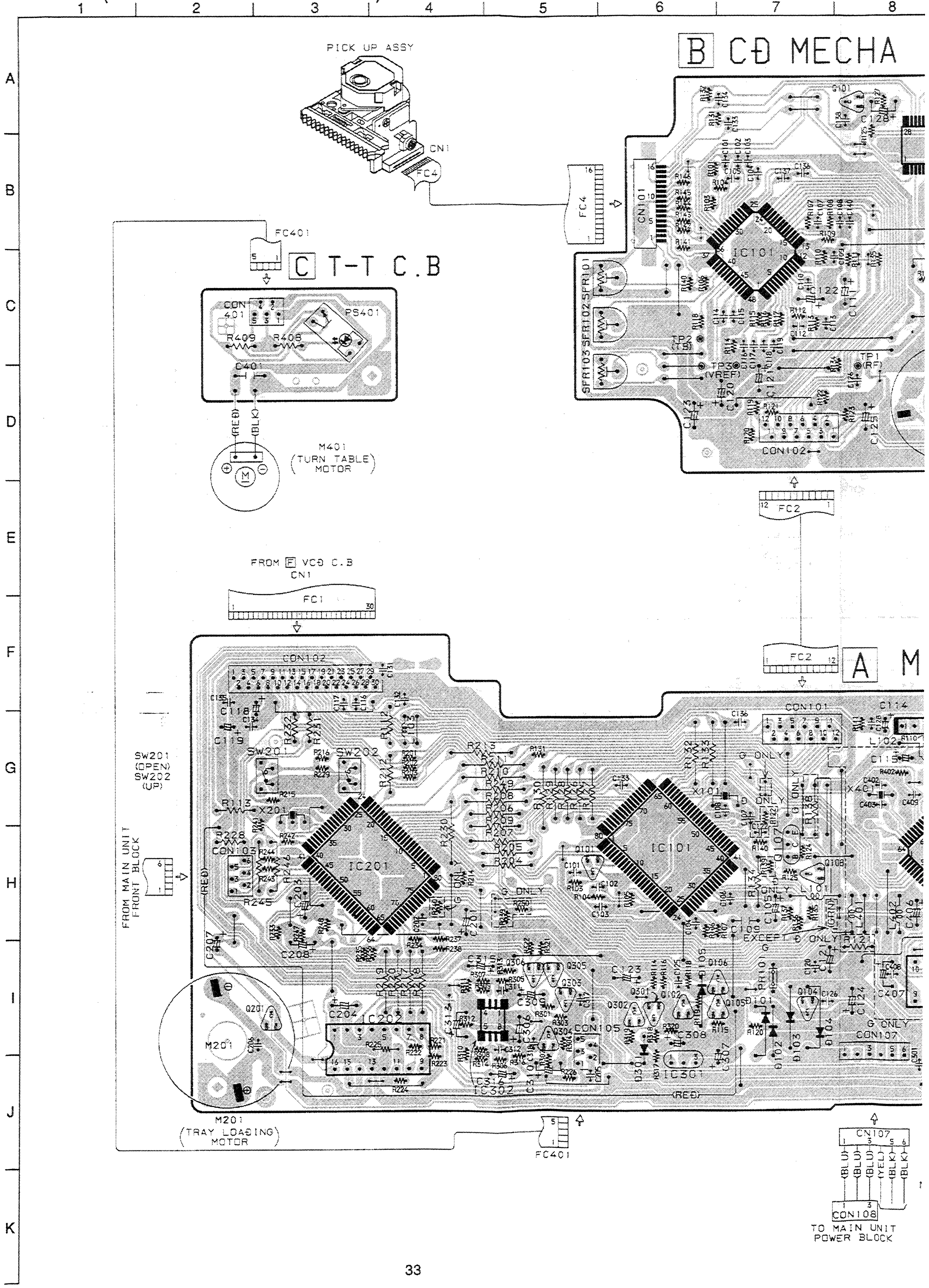
7
A
B
C
D
E
F
G
FROM MAIN UNIT
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
D DRIVE C.B
M1 (SPINDLE MOTOR)
SW1 (INSIDE LIMIT SWITCH)
SW1
M3
M2 (SLED MOTOR)
M2
PIN3
FC5
FROM MAIN UNIT

SCHEMATIC DIAGRAM-4 (WR)


FROM MAIN UNIT
TRACKING COIL
FOCUS COIL
+2.5V
+5V
PD IC
LD
PD UP ASSY KSM-213B
FROM MAIN UNIT
M1
M2
SW1
(SPINDLE MOTOR)
(SLED MOTOR)
(INSIDE LIMIT SW)
D DRIVE C.B
FROM MAIN UNIT
CON401
M401
C401 0.1
R409 27k
R408 560
PS401 GP1S53V
TURN TABLE MOTOR
C T-T C.B
320-2 CSN
420-1 WR

WIRING-4 (V4L: MAIN VCD／CD MECHA)


1
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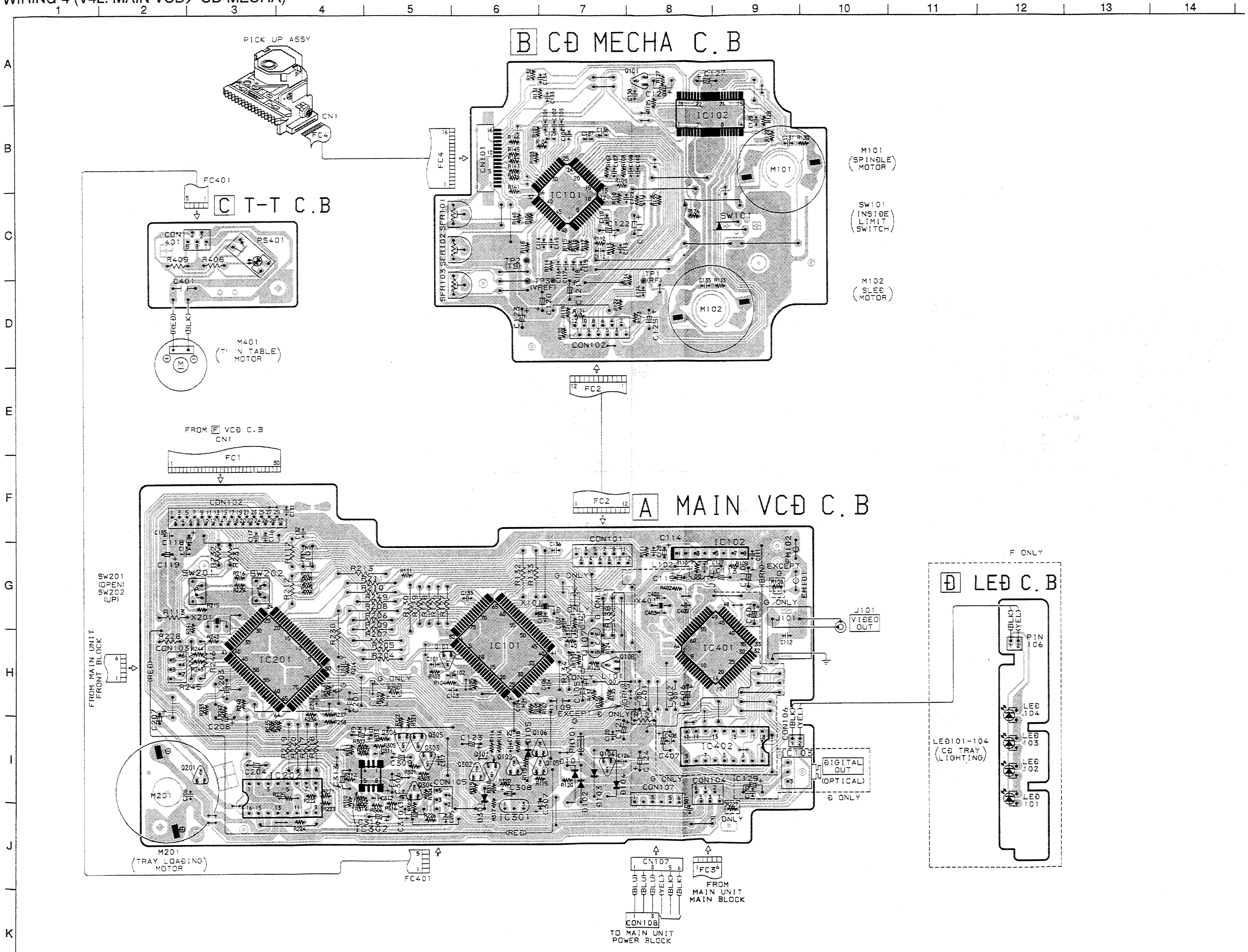
A
B
C
D
E
F
G
H
I
J
K
PICK UP ASSY
CN1
FC4
B CD MECHA
CN101
IC101
SFR101
SFR102
SFR103
TP2 (TE)
TP3 (VREF)
TP1 (RF)
CON102
FC2
FC401
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
FROM F VCD C.B CN1
FC1
FC2
A M
CON102
CON101
SW201 (OPEN) SW202 (UP)
SW201
SW202
FROM MAIN UNIT FRONT BLOCK
CON103
IC201
IC101
X101
X201
IC202
CON105
IC301
IC302
M201
M201 (TRAY LOADING MOTOR)
FC401
CN107
(BLU)
(BLU)
(BLU)
(YEL)
(BLK)
(BLK)
CON108
TO MAIN UNIT POWER BLOCK

WIRING-4 (V4L: MAIN VCD／CD MECHA)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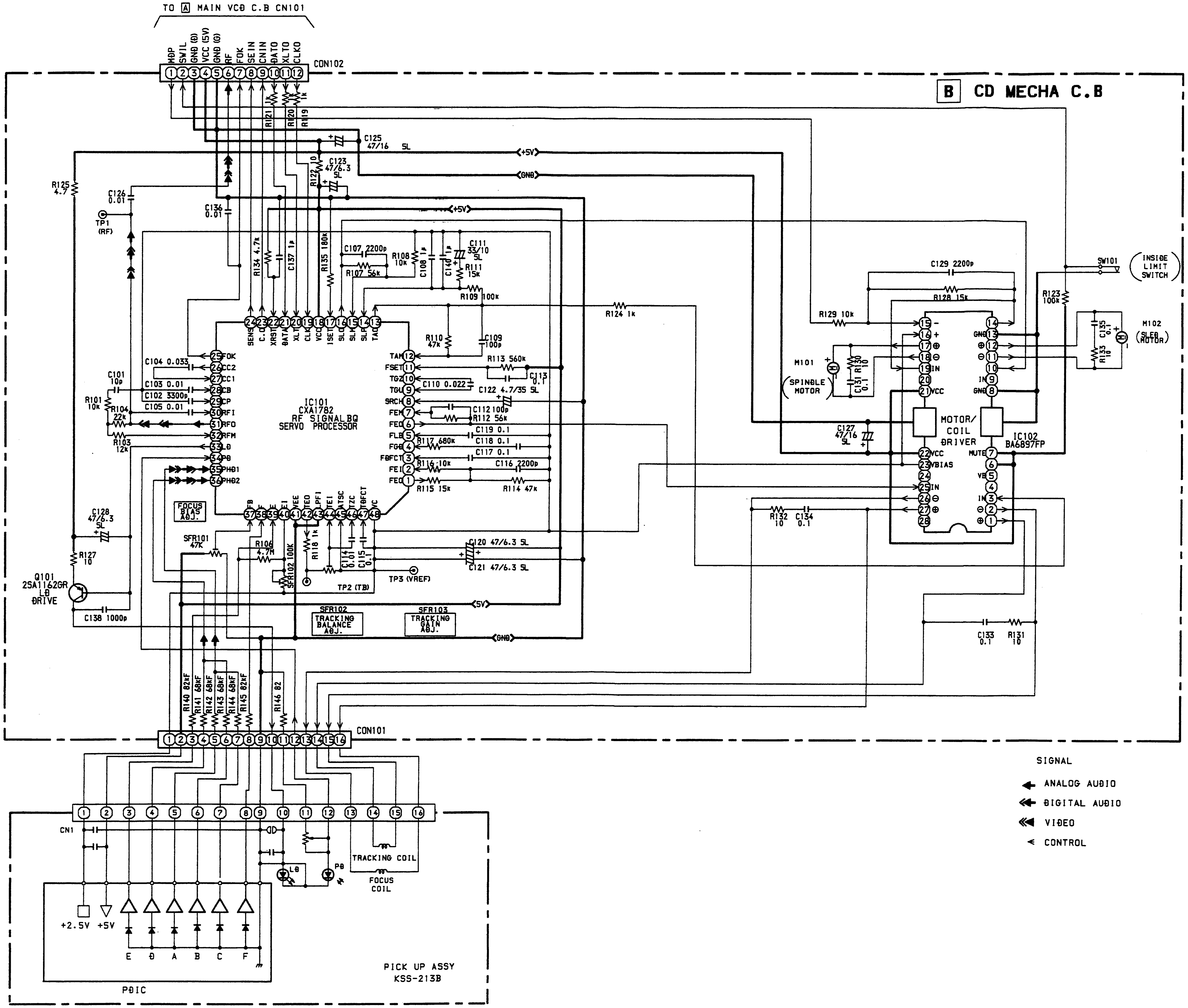
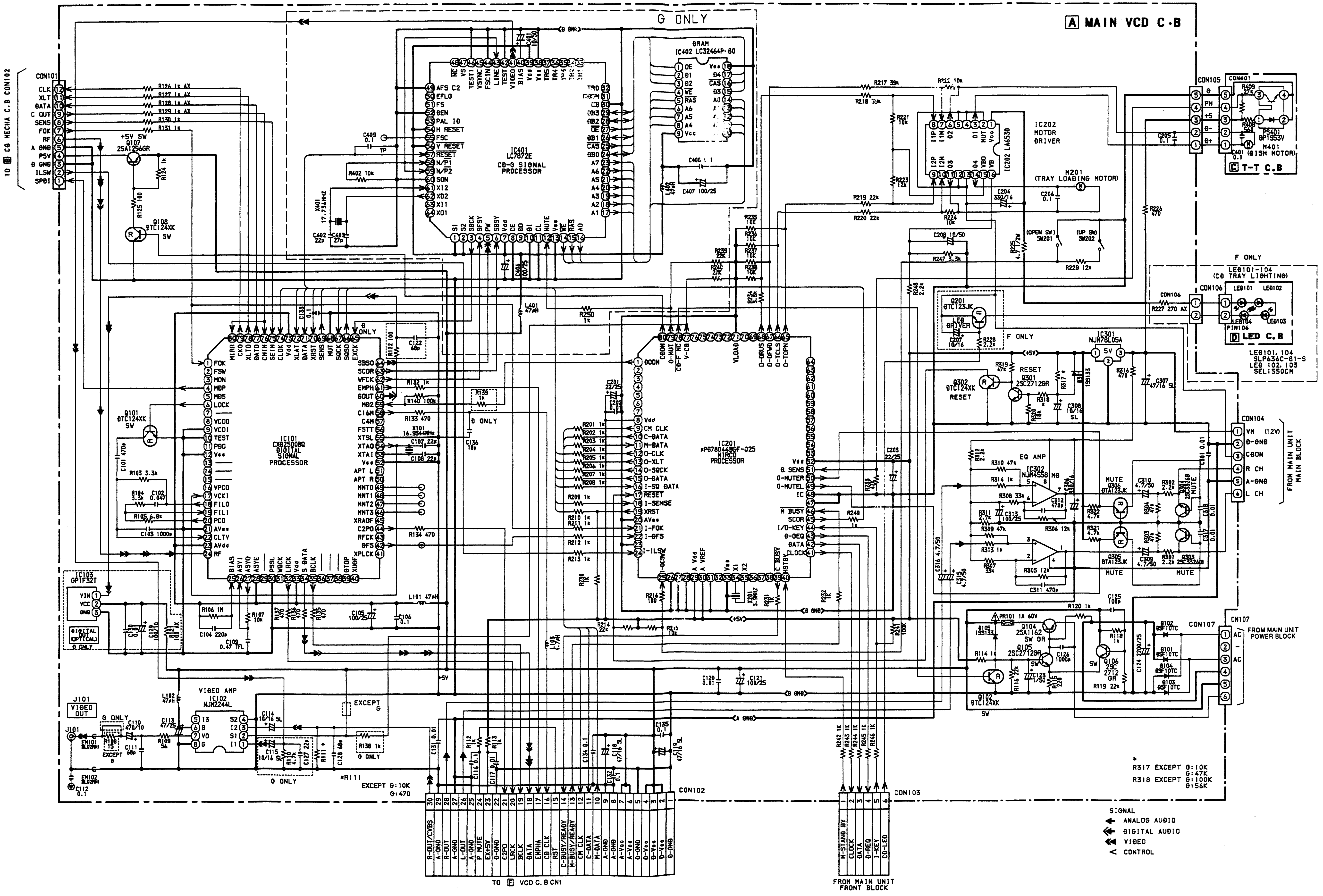
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
PICK UP ASSY
CN1
FC4
B CD MECHA C.B
CN101
IC101
IC102
SFR101
SFR102
SFR103
TP3 (VREF)
TP1 (RF)
CON102
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
FC2
FC401
C T-T C.B
CON401
PS401
R409
R406
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
FROM F VCD C.B CN1
FC1
A MAIN VCD C.B
CON102
CON101
IC102
IC201
IC101
IC401
IC402
IC301
IC202
CON103
CON105
CON104
CON106
CON107
SW201 (OPEN) SW202 (UP)
FROM MAIN UNIT FRONT BLOCK
J101 VIDEO OUT
DIGITAL OUT (OPTICAL)
D ONLY
G ONLY
EXCEPT
M201 (TRAY LOADING MOTOR)
FC401
CN107
(BLU) (BLU) (BLU) (YEL) (BLK) (BLK)
CON108
TO MAIN UNIT POWER BLOCK
FC3
FROM MAIN UNIT MAIN BLOCK
F ONLY
D LED C.B
PIN 106
(BLK) (YEL)
LED101-104 (CD TRAY LIGHTING)
LED 104
LED 103
LED 102
LED 101

SCHEMATIC DIAGRAM-5 (V4L: CD MECHA)

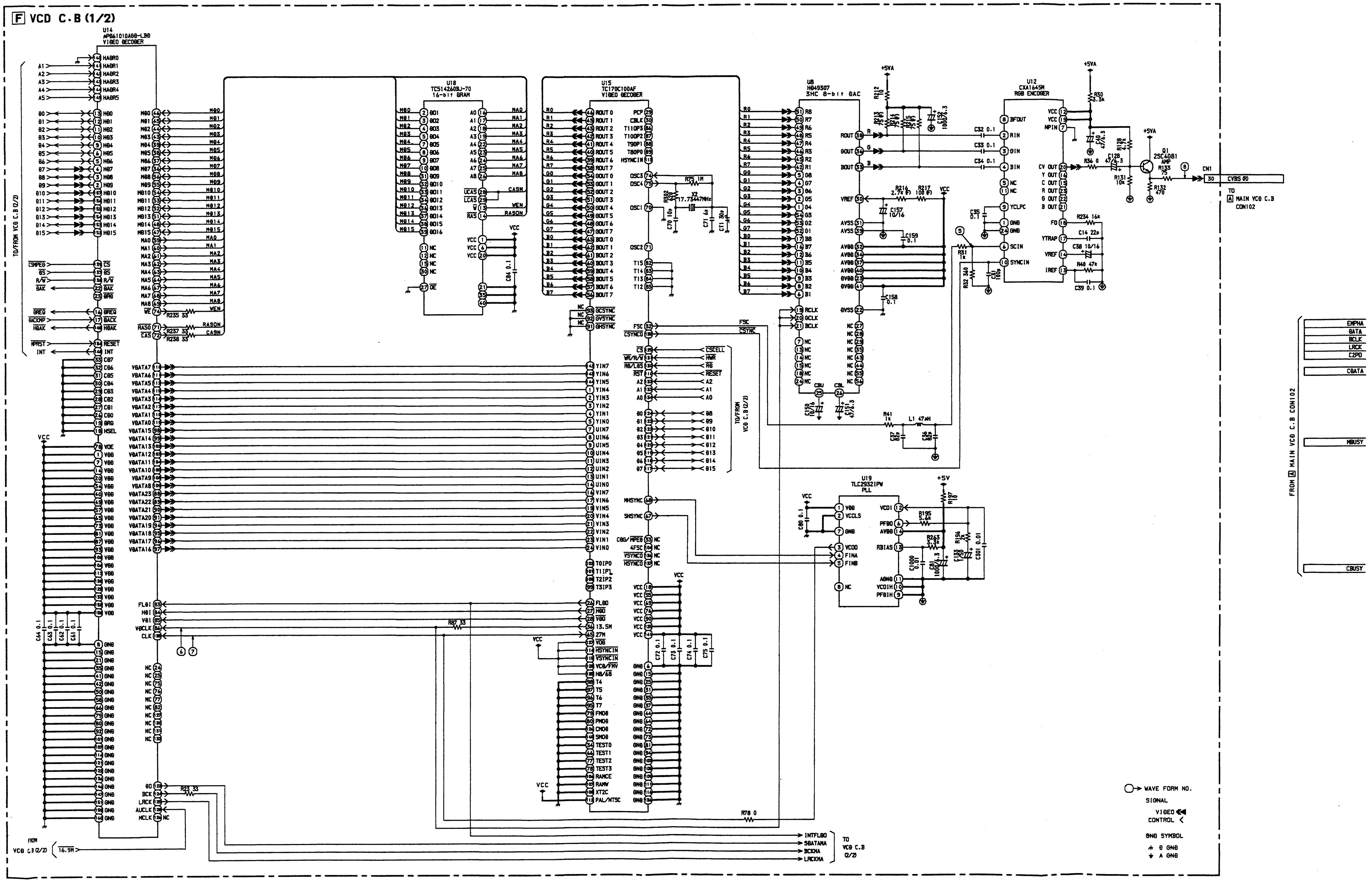

TO A MAIN VCD C.B CN101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
R121
R120
R119 1k
C125 47/16 SL
+5V
GND
C123 47/6.3 SL
R122 10
R125 4.7
C126 0.01
TP1 (RF)
C136 0.01
+5V
R134 4.7k
C137 1p
R135 180k
C107 2200p
R107 56k
R108 10k
C108 1p
C140 1p
C111 33/10 SL
R111 15k
R109 100k
R124 1k
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.022
C122 4.7/35 SL
C112 100p
R112 56k
C119 0.1
R117 680k
C118 0.1
C117 0.1
R116 10k
C116 2200p
R115 15k
R114 47k
SENS
C.OUT
XRST
DATA
XLT
CLK
VCO
ISET
SL0
SLM
SLP
TAO
FOK
CC2
CC1
CB
CP
RFI
RFO
RFM
LD
PD
PHD1
PHD2
C104 0.033
C103 0.01
C102 3300p
C105 0.01
C101 10p
R101 10k
R104 22k
R103 12k
IC101
CXA1782
RF SIGNAL DQ
SERVO PROCESSOR
TAM
FSET
TGZ
TGU
SRCH
FEM
FEO
FLB
FGD
FBFCT
FEI
FEO
FOCUS BIAS ADJ.
SFR101 47K
R106 4.7M
SFR102 100K
R118 1k
C114 0.01
C115 0.1
C120 47/6.3 SL
C121 47/6.3 SL
TP2 (TB)
TP3 (VREF)
C128 47/6.3 SL
R127 10
Q101
2SA1162GR
LD
DRIVE
C138 1000p
5V
SFR102
TRACKING BALANCE ADJ.
SFR103
TRACKING GAIN ADJ.
GND
R140 82kF
R141 68kF
R142 68kF
R143 68kF
R144 68kF
R145 82kF
R146 82
CON101
C129 2200p
R128 15k
R129 10k
R123 100k
SW101
INSIDE LIMIT SWITCH
M102 (SLED MOTOR)
C135 0.1
R133 10
M101
(SPINDLE MOTOR)
C131 0.1
R130 10
C127 47/16 SL
MOTOR/ COIL DRIVER
IC102 BA6897FP
VCC
BIAS
IN
GND
MUTE
VB
R132 10
C134 0.1
C133 0.1
R131 10
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
CN1
TRACKING COIL
FOCUS COIL
LD
PD
+2.5V
+5V
E
D
A
B
C
F
PDIC
PICK UP ASSY KSS-213B

SCHEMATIC DIAGRAM-6 (V4L: MAIN VCD)

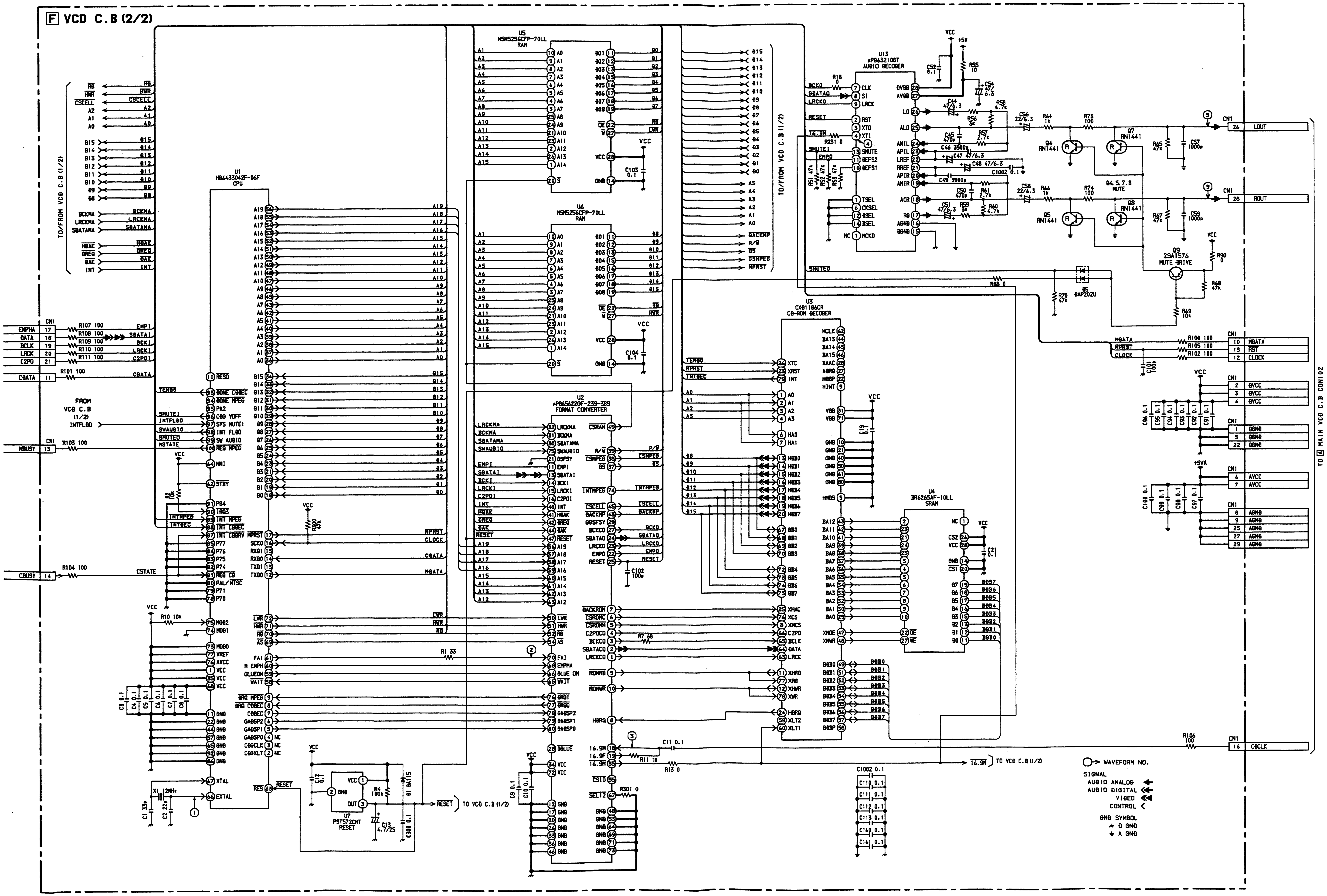


A MAIN VCD C.B
G ONLY
TO B CD MECHA C.B CON102
CON101
CLK
XLT
DATA
C OUT
SENS
FOK
RF
A GND
PSV
D GND
ILSW
SPDI
+5V SW
Q107
2SA1296GR
Q108
DTC124XK
SW
IC401
LC7872E
CD-G SIGNAL
PROCESSOR
X401
17.736MHz
DRAM
IC402 LC32464P-80
IC101
CXD2500BQ
DIGITAL
SIGNAL
PROCESSOR
X101
16.9344MHz
Q101
DTC124XK
SW
IC103
GP1F32T
DIGITAL
OUT
(OPTICAL)
D ONLY
IC201
μPD78044DGF-025
MICRO
PROCESSOR
IC202 LA6530
MOTOR
DRIVER
M201
(TRAY LOADING MOTOR)
(OPEN SW)
SW201
(UP SW)
SW202
CON105
CON401
PH
+5
D-
D+
PS401
GP1S53V
M401
(DISH MOTOR)
C T-T C.B
F ONLY
LED101-104
(CD TRAY LIGHTING)
CON106
D LED C.B
LED101, 104
SLP636C-81-S
LED 102, 103
SEL1550CM
Q201
DTC123JK
LED
DRIVER
IC301
NJM78L05A
5V
Q302
DTC124XK
RESET
Q301
2SC2712GR
CON104
VM (12V)
D-GND
CDON
R CH
A-GND
L CH
FROM MAIN UNIT
MAIN BLOCK
EQ AMP
IC302
NJM4558 M8
MUTE
Q304
DTA123JK
Q306
2SC3326B
Q305
DTA123JK
Q303
2SC3326B
PR101 1A 60V
Q104
2SA1162
SW GR
Q105
2SC2712GR
Q106
2SC2712
GR
Q102
DTC124XK
SW
D101-D104
DSF10TC
CON107
CN107
AC
AC
FROM MAIN UNIT
POWER BLOCK
VIDEO AMP
IC102
NJM2244L
J101
VIDEO
OUT
EM101
EM102
EXCEPT G
G ONLY
*R111
EXCEPT G: 10K
G: 470
*
R317 EXCEPT G: 10K
G: 47K
R318 EXCEPT G: 100K
G: 56K
CON102
R-OUT/CVBS
A-GND
A-OUT
A-GND
L-OUT
P MUTE
EX+5V
D-GND
C2PO
LRCK
BCLK
DATA
EMPHA
CD CLK
RST
C-BUSY/READY
M-BUSY/READY
CM CLK
C-DATA
M-DATA
A-GND
A-Vcc
A-Vcc
D-GND
D-Vcc
D-Vcc
D-GND
TO F VCD C.B CN1
CON103
M-STAND BY
CLOCK
DATA
D-REQ
I-KEY
CD-LED
FROM MAIN UNIT
FRONT BLOCK
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

SCHEMATIC DIAGRAM-7 (V4L: VCD 1/2)

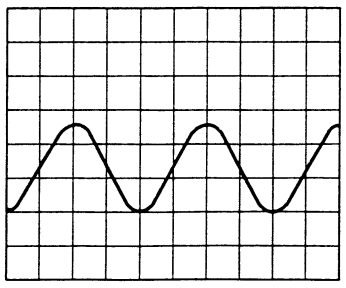

F VCD C.B (1/2)
U14
APB61010A60-LB0
VIDEO DECODER
U18
TC514260BJ-70
16-bit DRAM
U15
TC170C100AF
VIDEO DECODER
U8
HD49307
3HC 8-bit DAC
U12
CXA1645M
RGB ENCODER
Q1
2SC4081
AMP
U19
TLC2932IPW
PLL
X2
17.734475MHz
+5VA
+5V
VCC
CN1
CVBS 00
TO
A MAIN VCD C.B
CON102
TO/FROM VCD C.B (2/2)
TO/FROM VCD C.B (2/2)
FROM A MAIN VCD C.B CON102
FROM VCD C.B (2/2)
16.9M
INTFLD0
SDATAMA
BCKMA
LRCKMA
TO
VCD C.B
(2/2)
WAVE FORM NO.
SIGNAL
VIDEO
CONTROL
GND SYMBOL
D GND
A GND
EMPHA
DATA
BCLK
LRCK
C2PO
CDATA
MBUSY
CBUSY

SCHEMATIC DIAGRAM-8 (V4L: VCD 2/2)

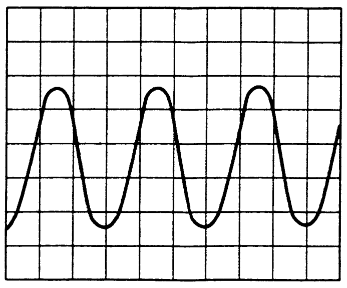

F VCD C.B (2/2)
TO/FROM VCD C.B (1/2)
U5 MSM5256CFP-70LL RAM
U6 MSM5256CFP-70LL RAM
U1 HD6433042F-06F CPU
U13 µPD63210GT AUDIO DECODER
U2 µPD65622GF-239-3B9 FORMAT CONVERTER
U3 CXD1186CR CD-ROM DECODER
U4 BR6265AF-10LL SRAM
U7 PST572CMT RESET
Q4 RN1441
Q5 RN1441
Q7 RN1441
Q8 RN1441
Q4,5,7,8 MUTE
Q9 2SA1576 MUTE DRIVE
D5 DAP202U
X1 12MHz
FROM VCD C.B (1/2) INTFLAG
CN1
EMPHA
DATA
BCLK
LRCK
C2PO
CDATA
MBUSY
CBUSY
LOUT
ROUT
MDATA
RST
CLOCK
DVCC
DGND
AVCC
AGND
CDCLK
+5V
+5VA
VCC
RESET TO VCD C.B (1/2)
16.9M TO VCD C.B (1/2)
TO A MAIN VCD C.B CON102
WAVEFORM NO.
SIGNAL
AUDIO ANALOG
AUDIO DIGITAL
VIDEO
CONTROL
GND SYMBOL
D GND
A GND

WAVE FORM

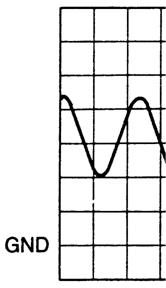
① U1 Pin (66) (EXTAL) VOLT/DIV: 1V TIME/DIV: 20nS



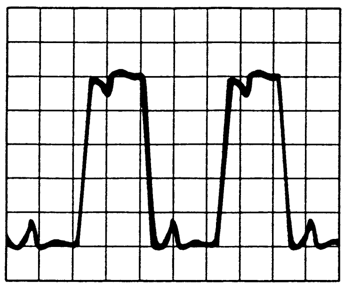
③ U2 Pin ⑱ (16.9M) VOLT/DIV: 1V TIME/DIV: 20nS



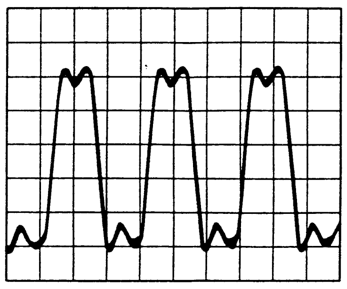
⑤ U12 Pin ⑥



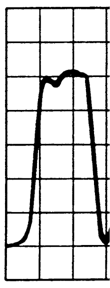
② U2 Pin (70) (FAI) VOLT/DIV: 1V TIME/DIV: 20nS



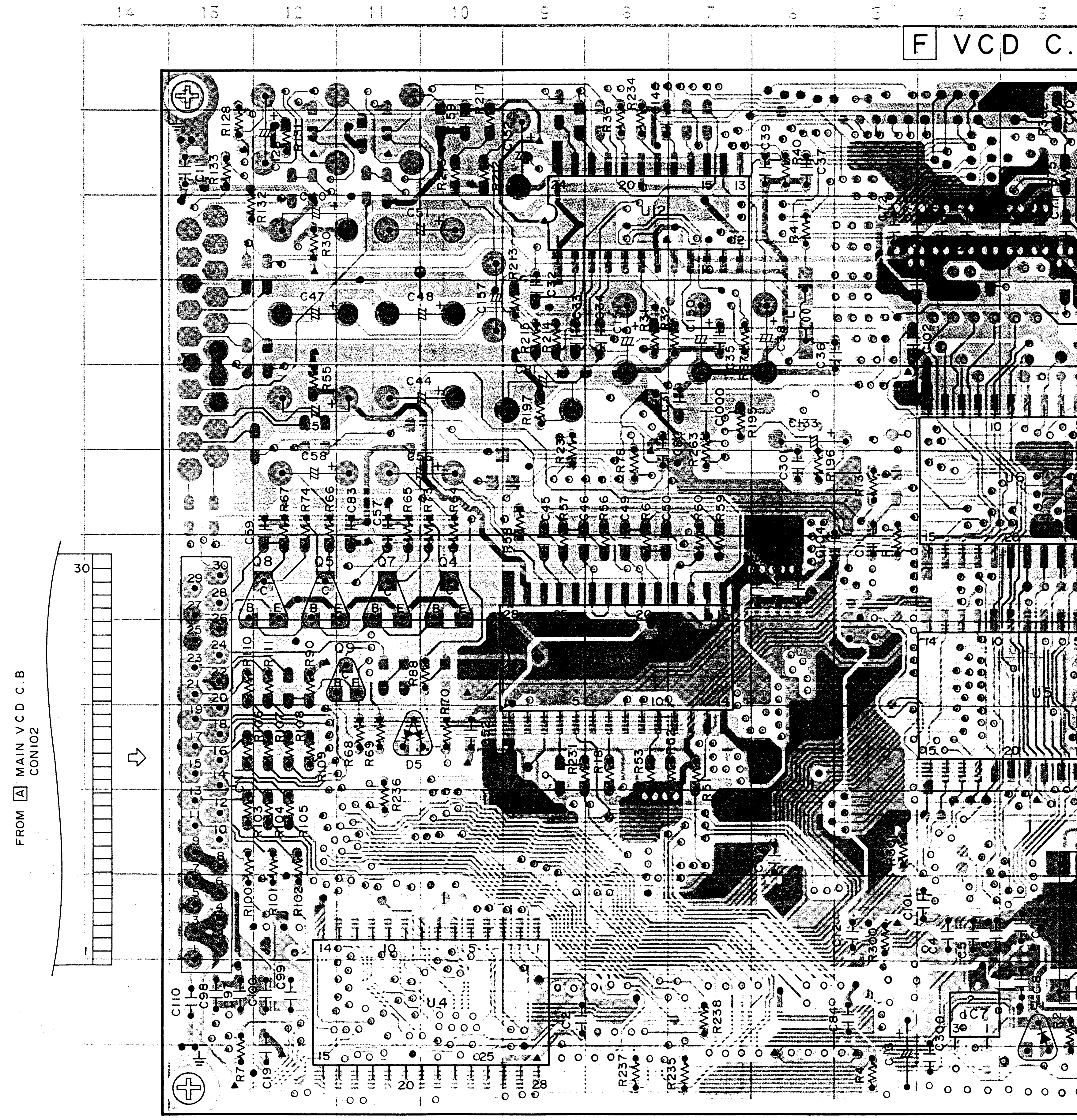
④ U13 Pin ④ (XTI) VOLT/DIV: 1V TIME/DIV: 20nS



⑥ U14 Pin (86)



WIRING-5 (V4L: VCD)

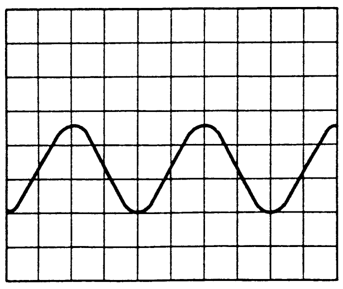

14
13
12
11
10
9
8
7
6
5
4
3
F VCD C.
FROM A MAIN VCD C.B CON102
30
1
U4
U12
U5
U6
D5
Q4
Q5
Q7
Q8
Q9

Through-Hole Note

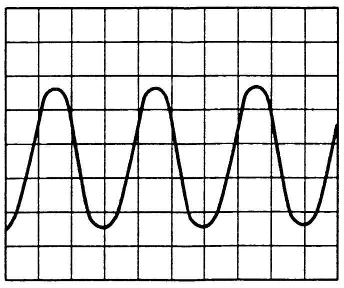
SIGNAL	VCC	+5V	A GND	D GND
○	▲	▲	●	●

E FORM

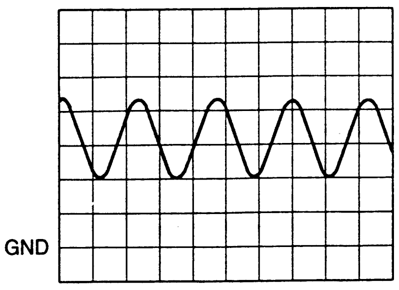
U1 Pin (66) (EXTAL) VOLT/DIV: 1V TIME/DIV: 20nS



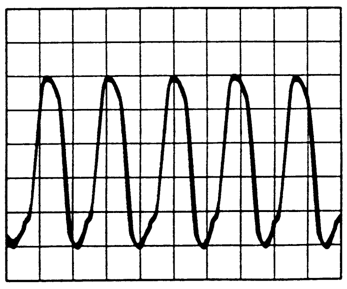
③ U2 Pin ⑱ (16.9M) VOLT/DIV: 1V TIME/DIV: 20nS



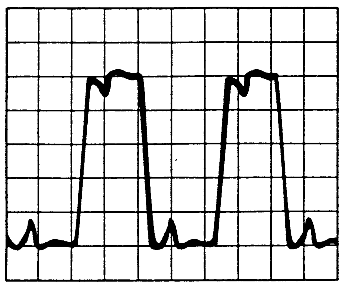
⑤ U12 Pin ⑥ (SC IN) VOLT/DIV: 1.0V TIME/DIV: 0.1μS



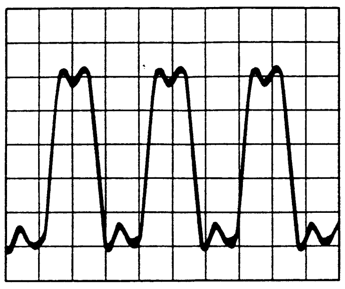
⑦ U14 Pin (135) (CLK) VOLT/DIV: 1V TIME/DIV: 20nS



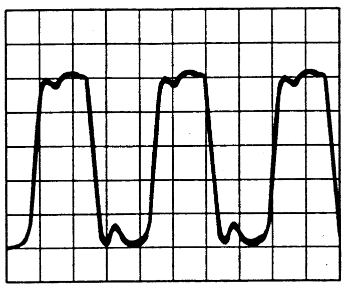
U2 Pin (70) (FAI) VOLT/DIV: 1V TIME/DIV: 20nS



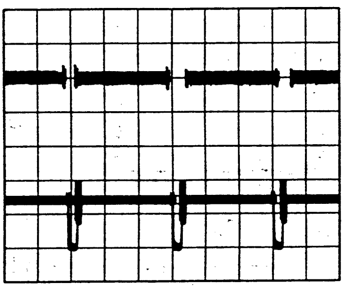
④ U13 Pin ④ (XTI) VOLT/DIV: 1V TIME/DIV: 20nS



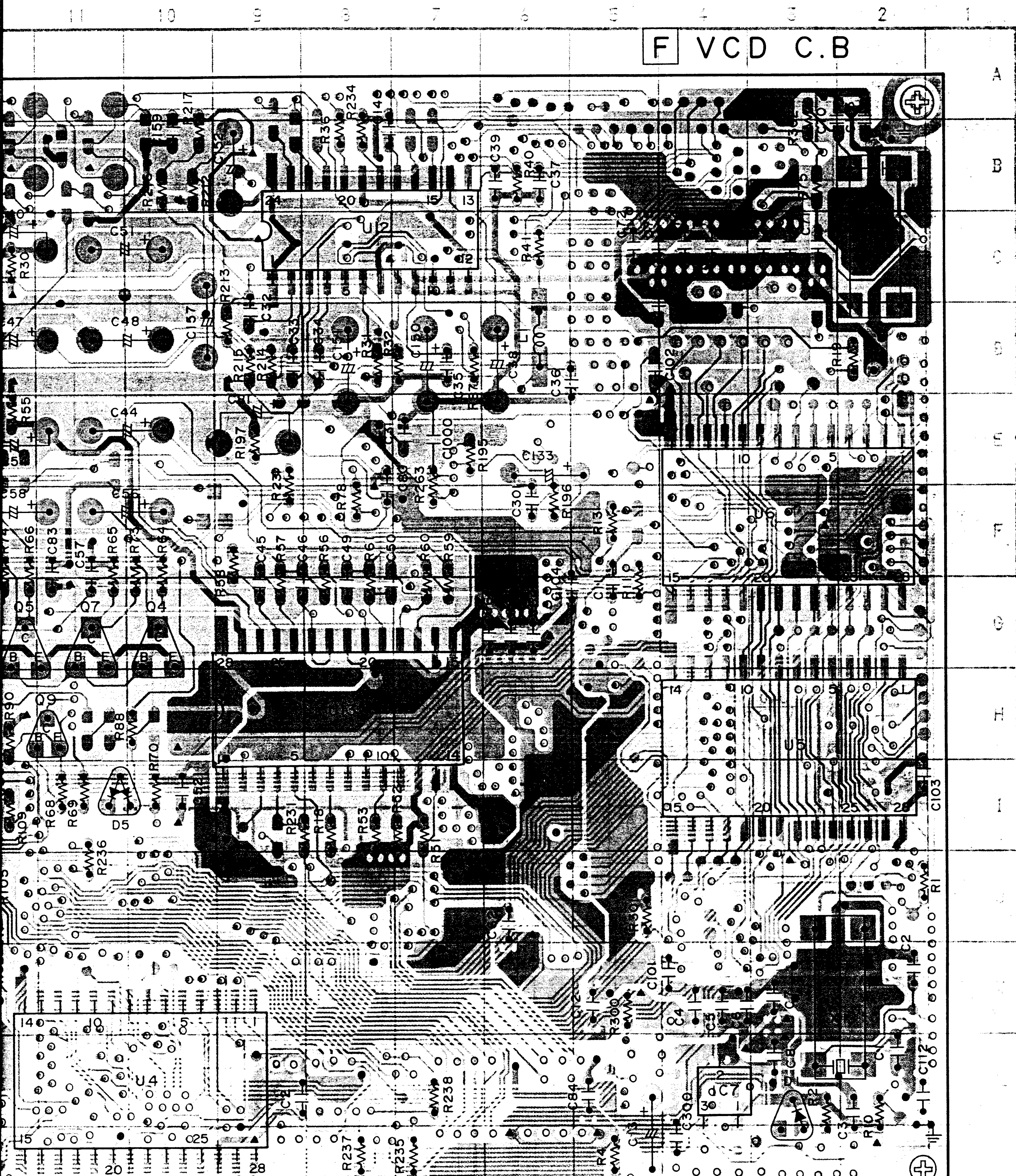
⑥ U14 Pin (86) (VD CLK) VOLT/DIV: 1V TIME/DIV: 20nS



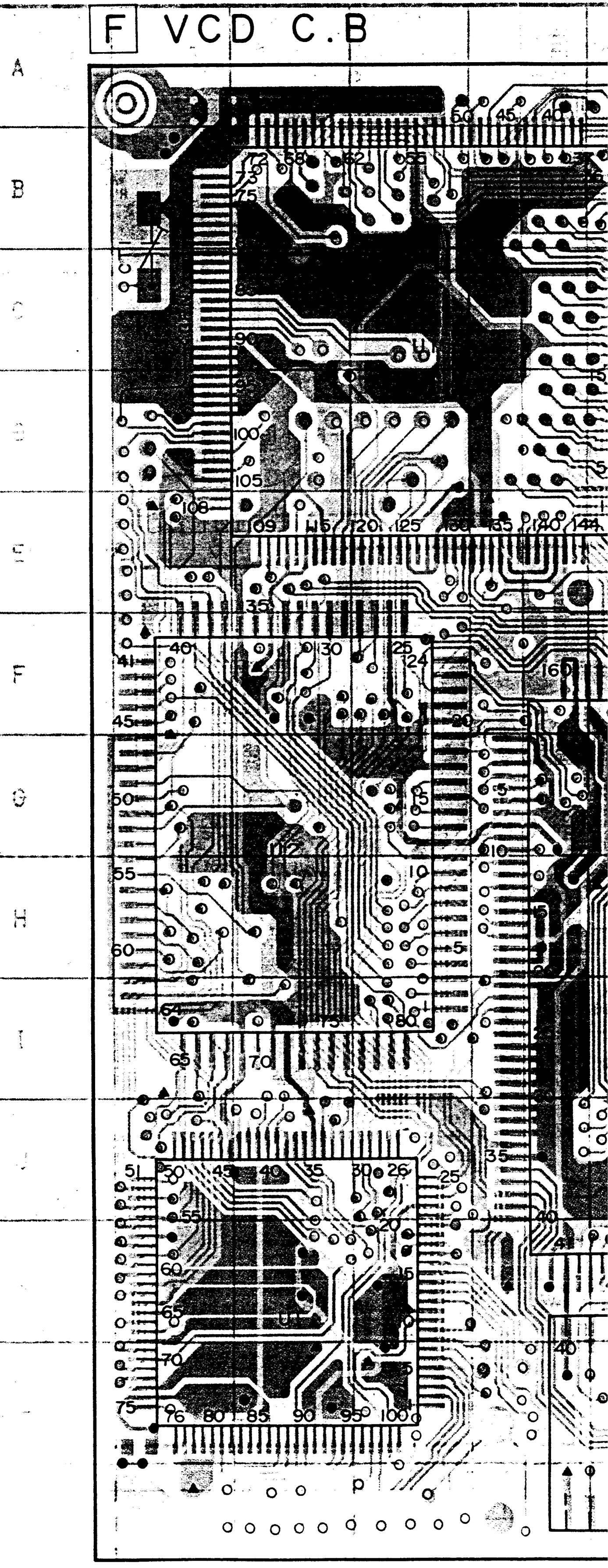
⑧ CN1 Pin ㉚ (CVBS R) WHITE VOLT/DIV: 200mV TIME/DIV: 20μS



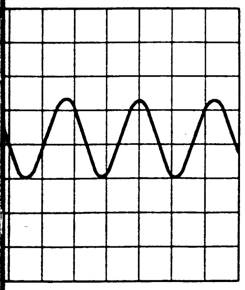
F VCD C.B


11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
U2
U3
U4
U5
U6
C5
C44
C48
C157
R213
R216
R197
R35
R234
R40
R41
C37
C39
C36
R195
R196
C33
C30
C45
C46
C49
C50
R56
R59
R60
Q4
Q7
Q9
R88
R68
R69
D5
R236
R237
R235
R238
R231
R53
C84
C101
C103
C112
C300
C7
R306
R1

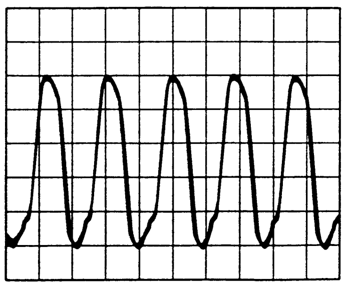
F VCD C.B


1
2
3
4
5
A
B
C
D
E
F
G
H
I
J

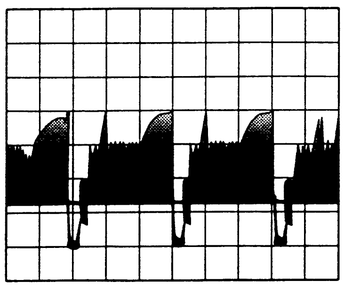
(SC IN) VOLT/DIV: 1.0V TIME/DIV: 0.1µS



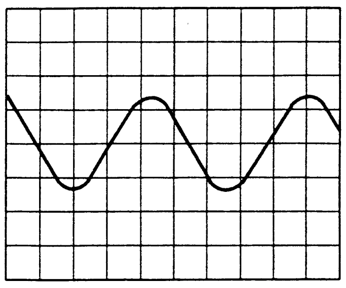
⑦ U14 Pin (135) (CLK) VOLT/DIV: 1V TIME/DIV: 20nS



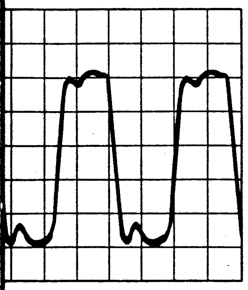
KARAOKE VOLT/DIV: 200mV TIME/DIV: 20µS



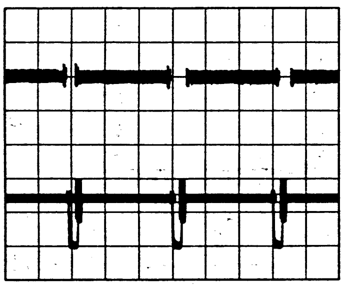
⑨ CN1 Pin ㉖ (L OUT) CN1 Pin ㉘ (R OUT) 1kHz OUTPUT VOLT/DIV: 1.0V TIME/DIV: 0.2mS



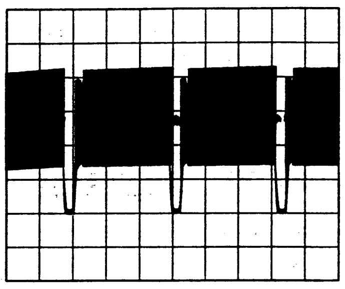
(VD CLK) VOLT/DIV: 1V TIME/DIV: 20nS

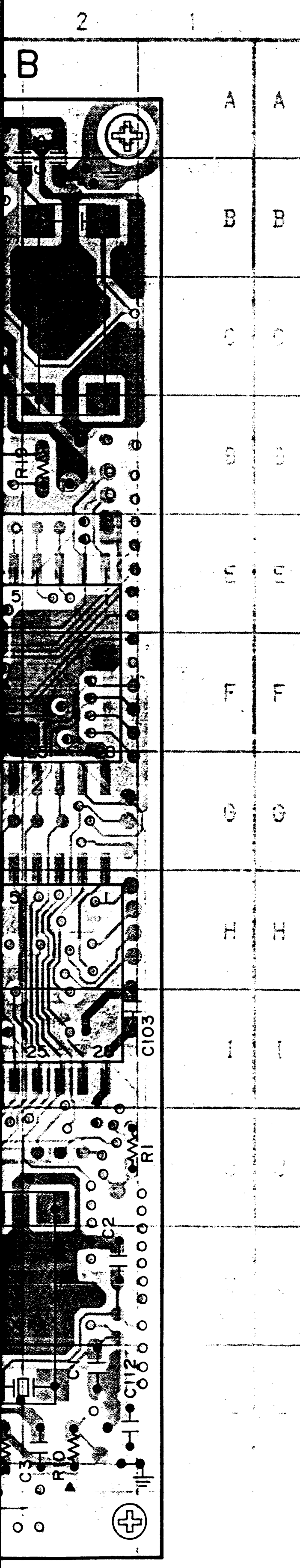


⑧ CN1 Pin ㉚ (CVBS R) WHITE VOLT/DIV: 200mV TIME/DIV: 20µS

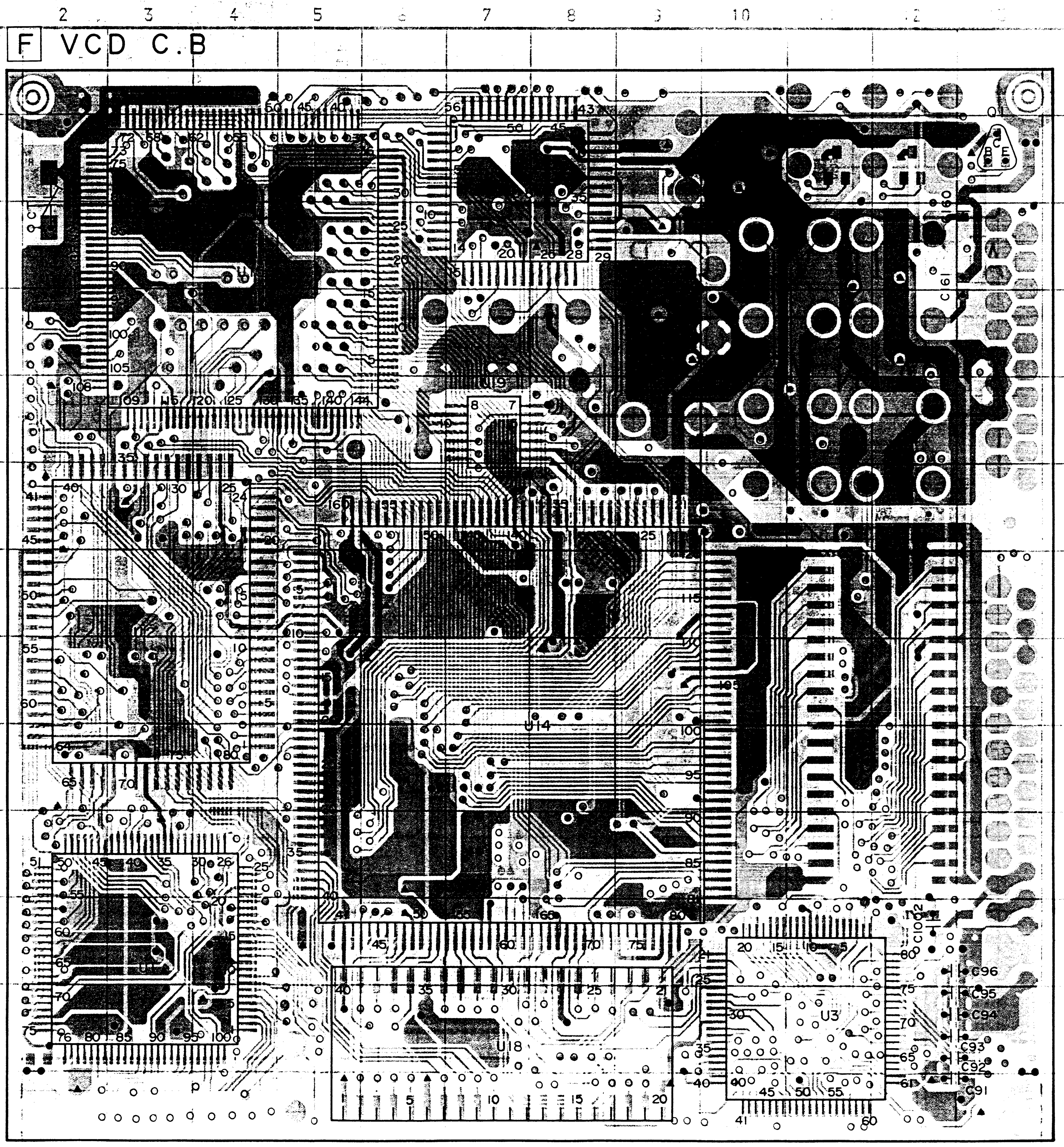


BLUE VOLT/DIV: 100mV TIME/DIV: 20µS

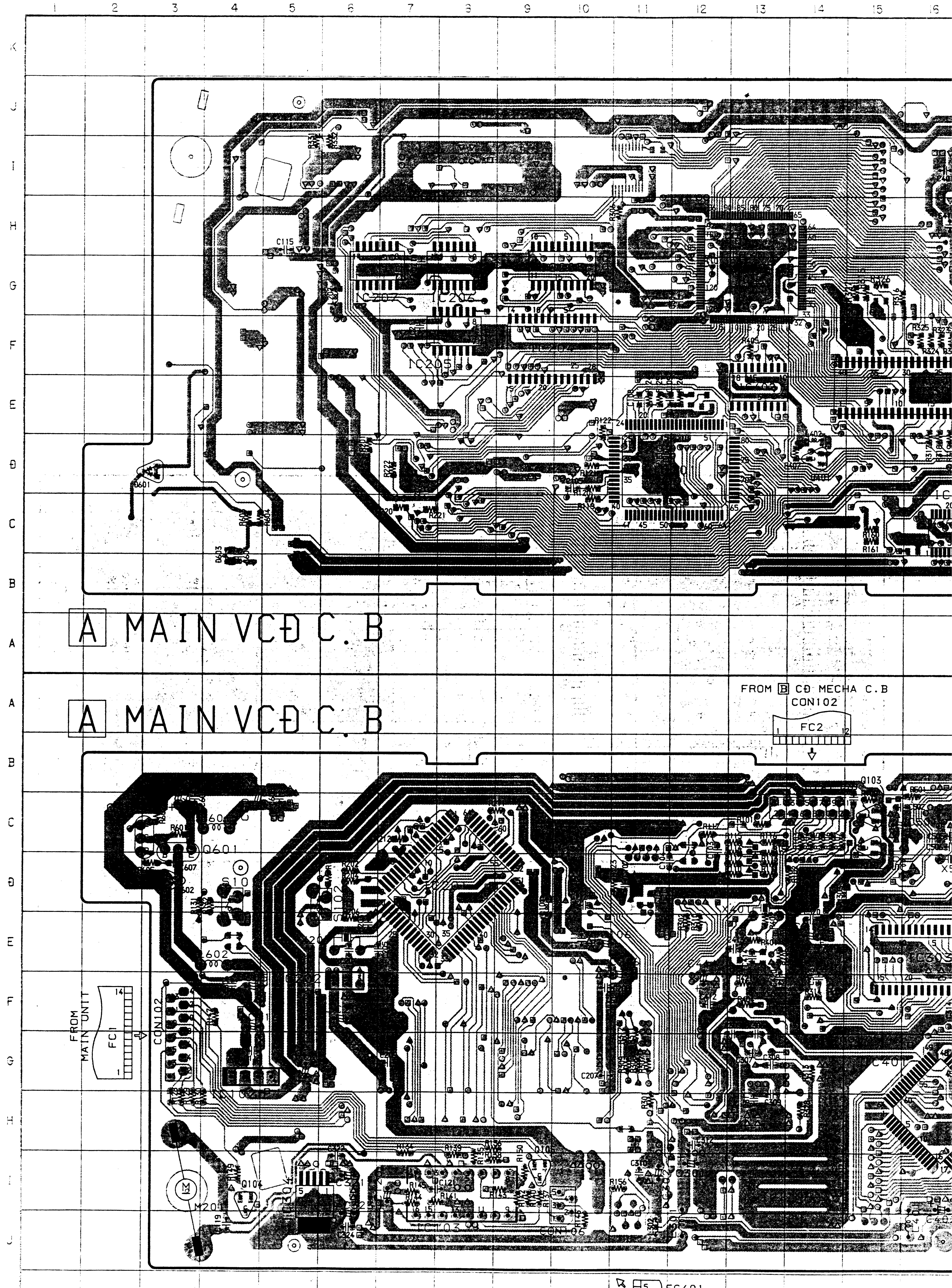


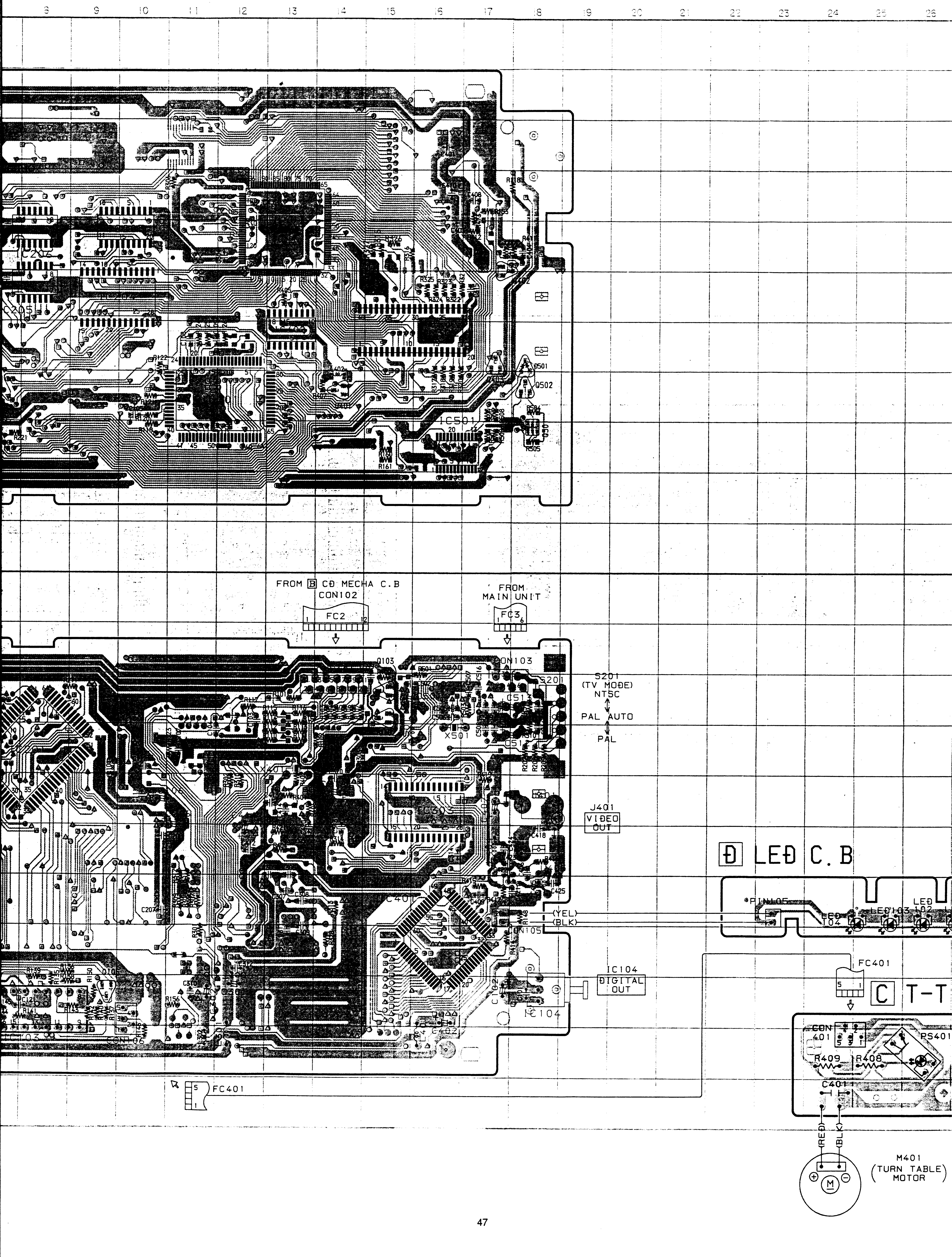


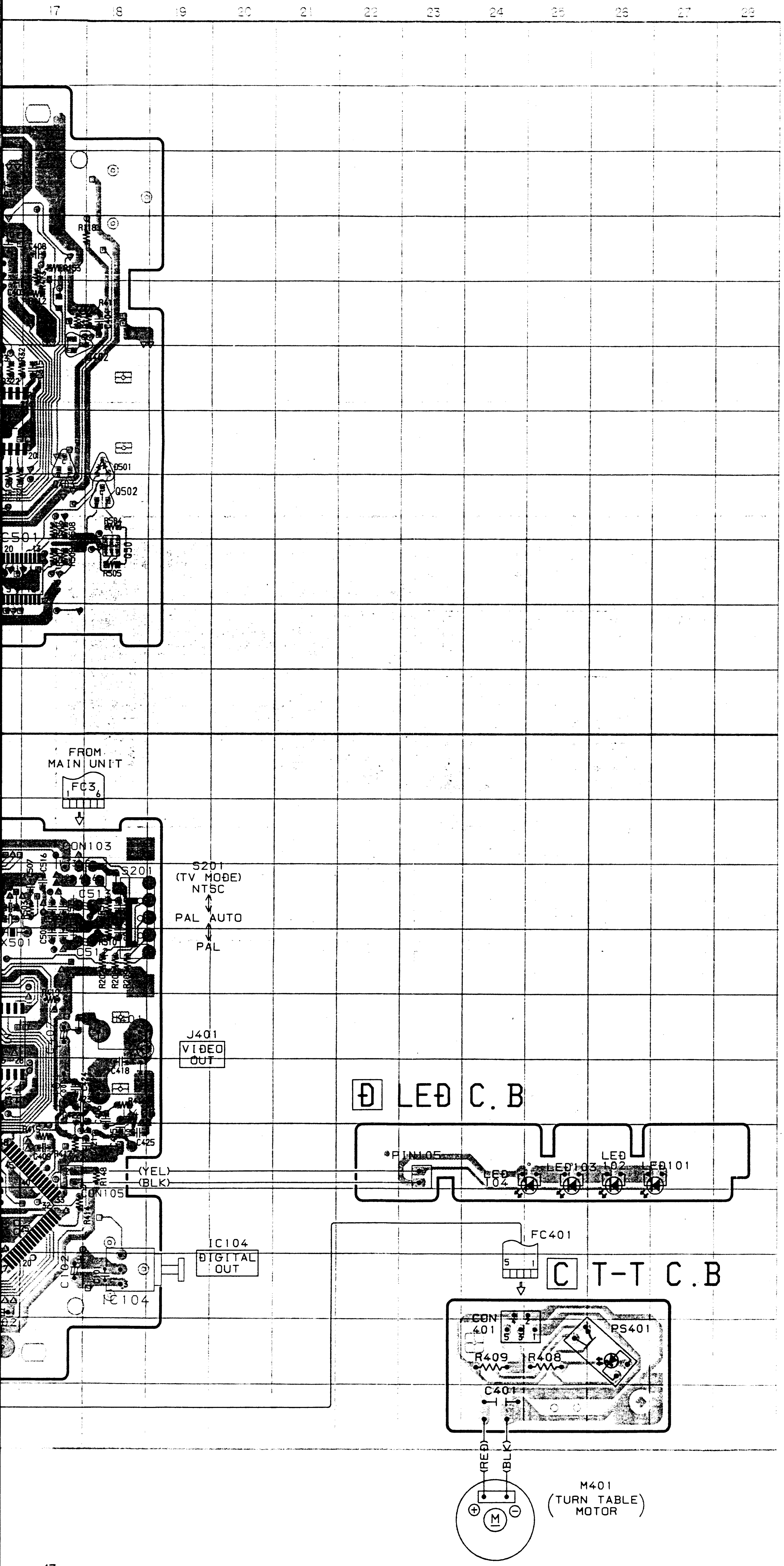
F VCD C.B


1
2
3
4
5
6
7
8
9
10
11
12
Q1
B
C
E
C161
U19
U14
U18
U3
C102
C96
C95
C94
C93
C92
C91

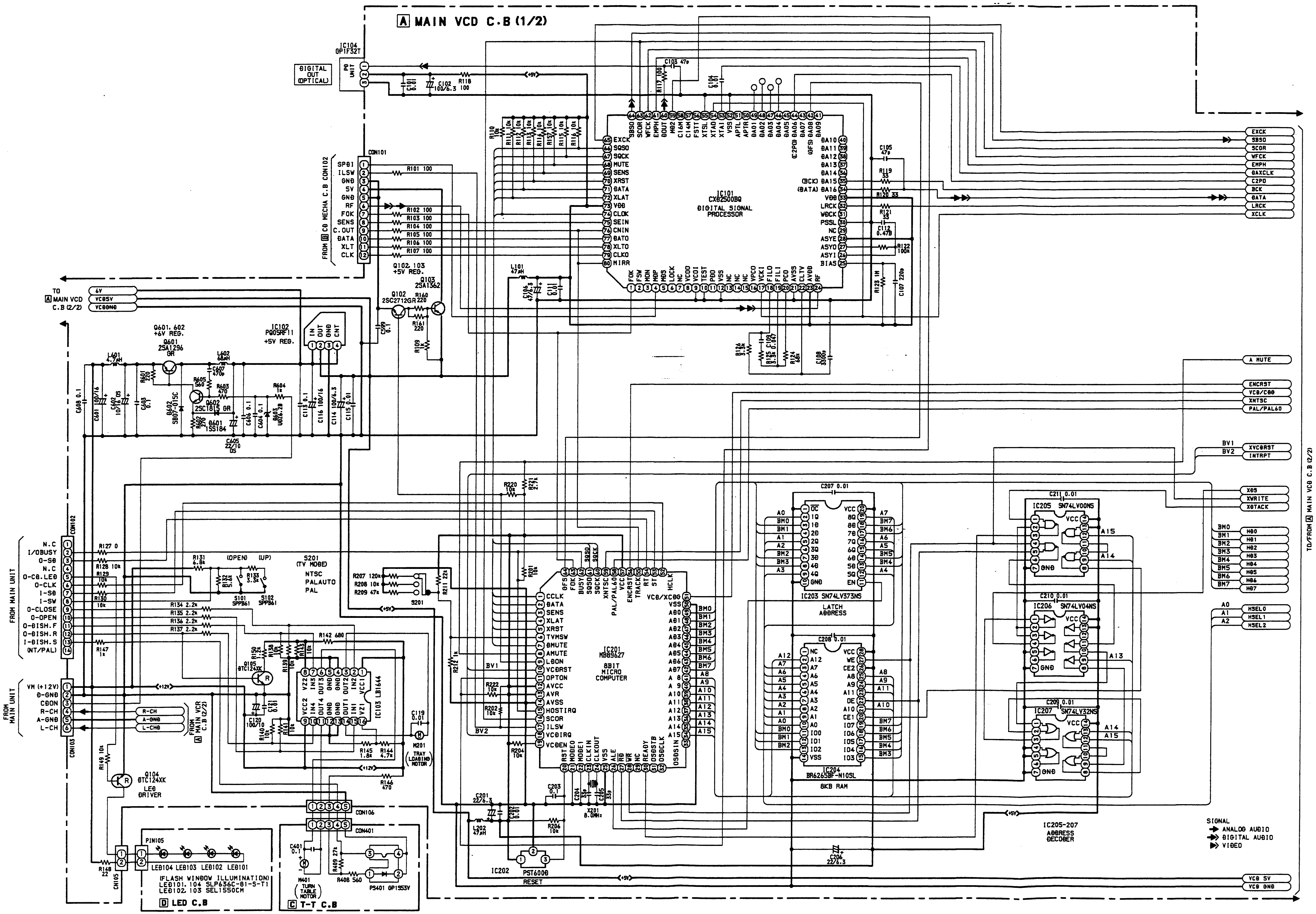
WIRING-6 (V5: MAIN VCD)


A MAIN VCD C.B
A MAIN VCD C.B
FROM B CD MECHA C.B
CON102
FC2
FROM MAIN UNIT
FC1
CON102
FC401
IC207
IC206
IC205
IC204
IC103
IC303
CON106
Q601
Q104
Q103
M201
S10
S102
C115
C207
R122
R161
R221
R222

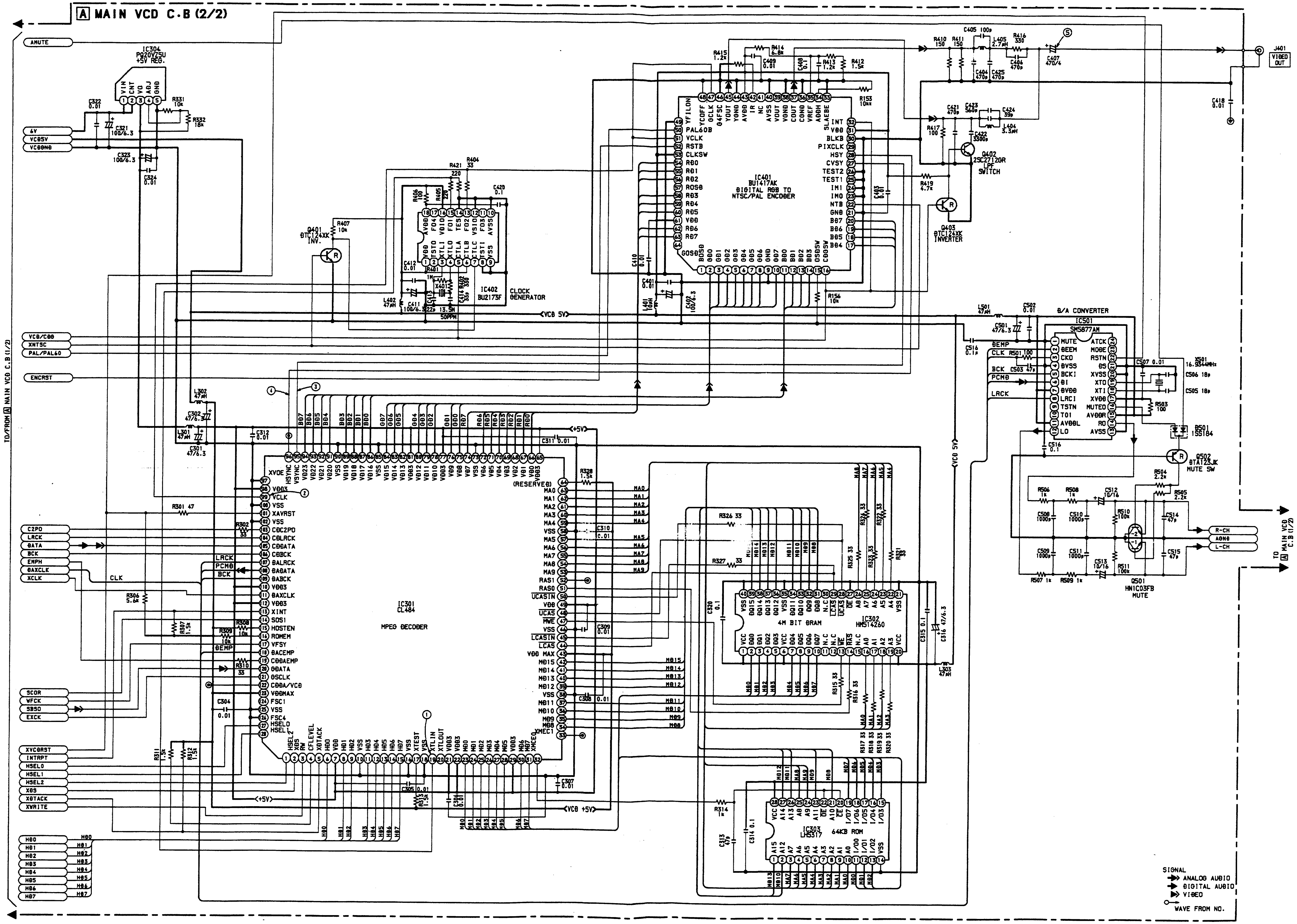

8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
IC202
IC205
IC501
Q501
Q502
R505
FROM B CD MECHA C.B
CON102
FC2
FROM
MAIN UNIT
FC3
CON103
Q103
S201
S201
(TV MODE)
NTSC
PAL AUTO
PAL
X501
J401
VIDEO
OUT
D LED C.B
PIN105
LED104
LED103
LED102
(YEL)
(BLK)
CON105
C401
IC104
DIGITAL
OUT
IC104
C402
CON106
IC103
FC401
FC401
C T-T
CON
401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE
MOTOR)


17
18
19
20
21
22
23
24
25
26
27
28
Q501
Q502
C501
R505
FROM MAIN UNIT
FC3
1
6
CON103
S201
S201 (TV MODE)
NTSC
PAL AUTO
PAL
X501
J401
VIDEO OUT
C418
C425
D LED C.B
PIN105
LED 104
LED103
LED 102
LED101
(YEL)
(BLK)
CON105
IC104
DIGITAL OUT
IC104
FC401
5
1
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE MOTOR)
M

SCHEMATIC DIAGRAM-9 (V5: MAIN VCD 1/2)

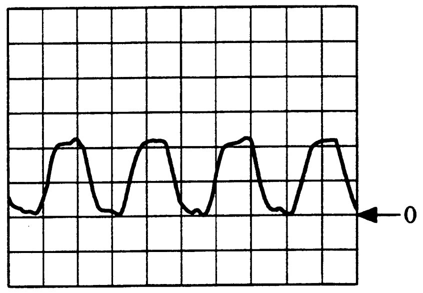

A MAIN VCD C.B (1/2)
IC104 GP1F32T
DIGITAL OUT (OPTICAL)
CON101
FROM B CD MECHA C.B CON102
SPDI
ILSW
GND
5V
GND
RF
FOK
SENS
C.OUT
DATA
XLT
CLK
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
Q102, 103 +5V REG.
Q102 2SC2712GR
Q103 2SA1362
IC102 PQ05RF11 +5V REG.
Q601, 602 +6V REG.
Q601 2SA1296 GR
Q602 2SC1815 GR
D602 SB07-015C
D601 1SS184
TO A MAIN VCD C.B (2/2)
6V
VCD5V
VCDGND
EXCK
SBSO
SCOR
WFCK
EMPH
DAXCLK
C2PO
BCK
DATA
LRCK
XCLK
A MUTE
ENCRST
VCD/CDD
XNTSC
PAL/PAL60
XVCDRST
INTRPT
XDS
XWRITE
XDTACK
HSEL0
HSEL1
HSEL2
VCD 5V
VCD GND
TO/FROM A MAIN VCD C.B (2/2)
FROM MAIN UNIT
CON102
N.C
I/DBUSY
D-SD
N.C
D-CD.LED
D-CLK
I-SD
I-SW
D-CLOSE
D-OPEN
D-DISH.F
D-DISH.R
I-DISH.S
(NT/PAL)
CON103
VM (+12V)
D-GND
CDON
R-CH
A-GND
L-CH
FROM A MAIN VCR C.B (2/2)
S201 (TV MODE) NTSC PALAUTO PAL
S101 SPPB61
S102 SPPB61
(OPEN) (UP)
IC201 MB89627 8BIT MICRO COMPUTER
IC103 LB1644
Q105 DTC124XK
Q104 DTC124XK LED DRIVER
M201 TRAY LOADING MOTOR
IC202 PST600D RESET
X201 8.0MHz
IC203 SN74LV373NS LATCH ADDRESS
IC204 BR6265BF-N10SL 8KB RAM
IC205 SN74LV00NS
IC206 SN74LV04NS
IC207 SN74LV32NS
IC205-207 ADDRESS DECODER
CON106
CON401
CN105
PIN105
LED104 LED103 LED102 LED101
(FLASH WINDOW ILLUMINATION)
LED101, 104 SLP636C-81-5-T1
LED102, 103 SEL1550CM
D LED C.B
M401 TURN TABLE MOTOR
PS401 GP1S53V
C T-T C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO

SCHEMATIC DIAGRAM-10 (V5: MAIN VCD 2/2)

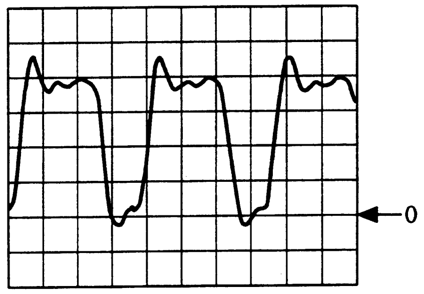

A MAIN VCD C.B (2/2)
IC304 PQ20VZ5U +5V REG.
IC401 BU1417AK DIGITAL RGB TO NTSC/PAL ENCODER
IC402 BU2173F CLOCK GENERATOR
X401 13.5M 50PPM
Q401 DTC124XK INV.
Q402 2SC2712GR LPF SWITCH
Q403 DTC124XK INVERTER
J401 VIDEO OUT
D/A CONVERTER
IC501 SM5877AM
X501 16.9344MHz
Q502 DTA123JK MUTE SW
Q501 HN1C03FB MUTE
D501 1SS184
IC301 CL484 MPEG DECODER
IC302 HM514260 4M BIT DRAM
IC303 LH5317 64KB ROM
AMUTE
6V
VCD5V
VCDGND
VCD/CDD
XNTSC
PAL/PAL60
ENCRST
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
XCLK
SCOR
WFCK
SBSO
EXCK
XVCDRST
INTRPT
HSEL0
HSEL1
HSEL2
XDS
XDTACK
XWRITE
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
TO/FROM A MAIN VCD C.B (1/2)
TO A MAIN VCD C.B (1/2)
R-CH
AGND
L-CH
VCD 5V
VCD +5V
+5V
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
WAVE FROM NO.

WAVE FORM

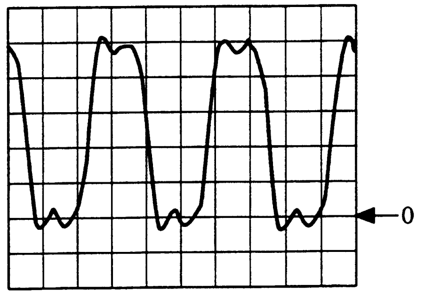
① IC301 Pin ⑲ (GCK) VOLT/DIV: 1V
40.5MHz TIME/DIV: 10nS
VCD PLAY
TV MODE: • NTSC
• PAL
• PAL AUTO



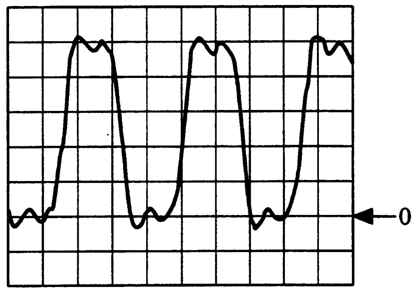
② IC301 Pin (99) (VCLK) VOLT/DIV: 1V
27MHz±1350Hz TIME/DIV: 10nS
VCD PLAY
TV MODE: • NTSC
• PAL
• PAL AUTO



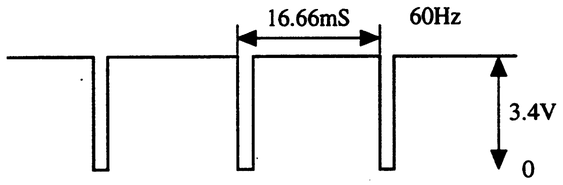
28.375MHz VOLT/DIV: 1V
CDG PLAY TIME/DIV: 10nS
TV MODE: • PAL
• PAL AUTO



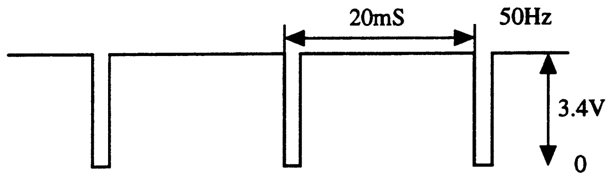
28.6363MHz VOLT/DIV: 1V
CDG PLAY TIME/DIV: 10nS
TV MODE: • NTSC



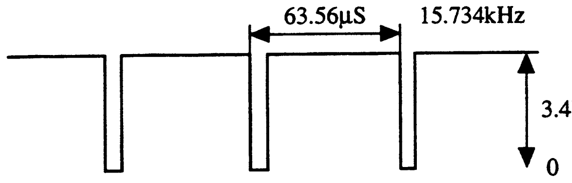
③ IC301 Pin (95) (V SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO


16.66mS
60Hz
3.4V
0

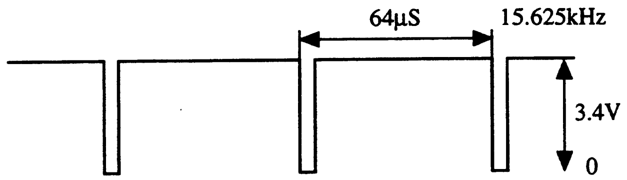
VCD, CDG PLAY
TV MODE: PAL


20mS
50Hz
3.4V
0

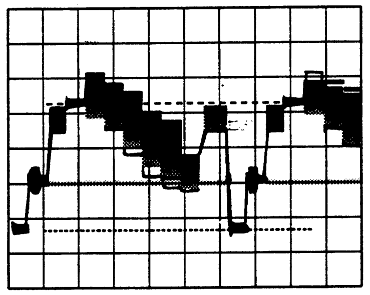
④ IC301 Pin (96) (H SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO


63.56μS
15.734kHz
3.4V
0

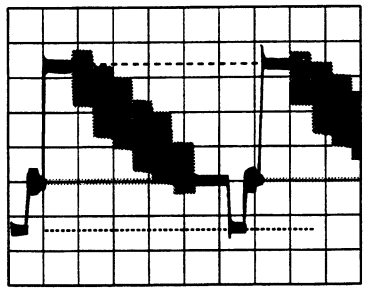
VCD, CDG PLAY
TV MODE: PAL


64μS
15.625kHz
3.4V
0

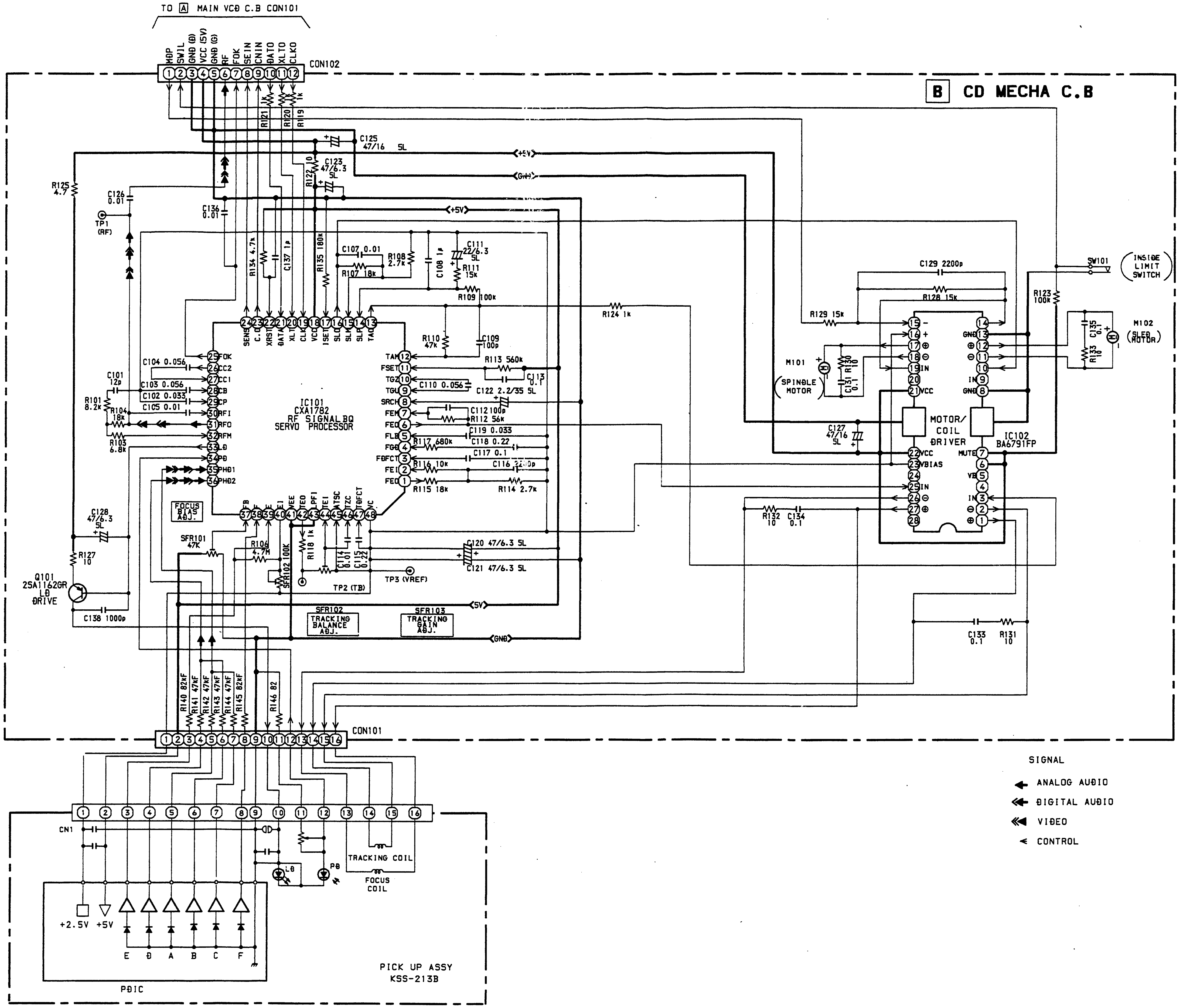
⑤ VIDEO OUT VOLT/DIV: 200mV
C407 ⊖ side TIME/DIV: 10μS
CDG PLAY: CD-T03 TRACK2
TV MODE:• NTSC



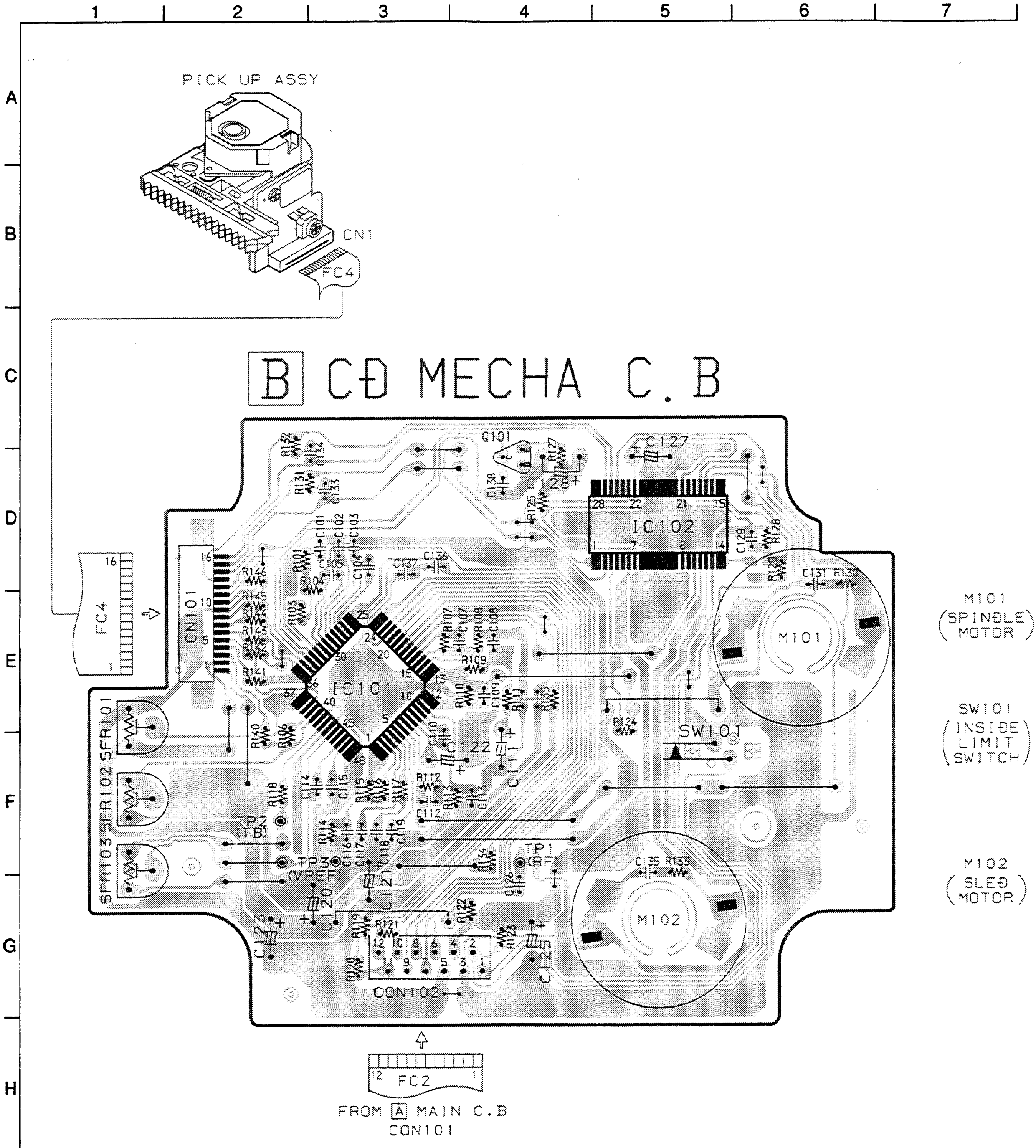
VCD PLAY: CD-T05 TRACK4 VOLT/DIV: 200mV
TV MODE:• NTSC TIME/DIV: 10μS



;CHEMATIC DIAGRAM-11 (V5: CD MECHA)


TO A MAIN VCD C.B CON101
CON102
MDP
SW1L
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
B CD MECHA C.B
C125 47/16 5L
C123 47/6.3 5L
R122 10
R121 1k
R120 1k
R119 1k
R125 4.7
C126 0.01
C136 0.01
TP1 (RF)
R134 4.7k
C137 1p
R135 180k
C107 0.01
R107 18k
R108 2.7k
C108 1p
C111 22/6.3 5L
R111 15k
R109 100k
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.056
C122 2.2/35 5L
C112 100p
R112 56k
C119 0.033
R117 680k
C118 0.22
C117 0.1
R116 10k
C116 220p
R115 18k
R114 2.7k
C104 0.056
C103 0.056
C102 0.033
C105 0.01
C101 12p
R101 8.2k
R104 18k
R103 6.8k
IC101 CXA1782 RF SIGNAL& SERVO PROCESSOR
FOK
CC2
CC1
CB
CP
RFI
RFO
RFM
LD
PD
PHD1
PHD2
SENS
C.OUT
XRST
DATA
XLT
CLK
VCC
ISET
SLO
SLM
SLP
TAO
TAM
FSET
TGU
SRCH
FEM
FEO
FLB
FGD
FDFCT
FEI
FE
FB
FOCUS BIAS ADJ.
SFR101 47K
R106 4.7M
SFR102 100K
R118 1k
C114 0.01
C115 0.22
TP2 (TB)
TP3 (VREF)
C120 47/6.3 5L
C121 47/6.3 5L
C128 47/6.3 5L
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
+5V
G+1
5V
GND
R124 1k
R129 15k
C129 2200p
R128 15k
R123 100k
SW101
INSIDE LIMIT SWITCH
C135 0.1
R133 10
M102 (SLED MOTOR)
M101 (SPINDLE MOTOR)
R130 10
C131 0.1
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102 BA6791FP
GND
VCC
MUTE
VBIAS
IN
VB
R132 10
C134 0.1
C133 0.1
R131 10
R140 82kF
R141 47kF
R142 47kF
R143 47kF
R144 47kF
R145 82kF
R146 82
CON101
CN1
TRACKING COIL
FOCUS COIL
LD
PD
+2.5V
+5V
E D A B C F
PDIC
PICK UP ASSY KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

WIRING-7 (V5: CD MECHA)


PICK UP ASSY
CN1
FC4
B CD MECHA C.B
FC4
CN101
IC101
IC102
Q101
SW101
M101
M102
SFR101
SFR102
SFR103
TP1 (RF)
TP2 (TB)
TP3 (VREF)
CON102
FC2
FROM A MAIN C.B CON101
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K

IC DESCRIPTION

IC, CXD2500BQ

Pin No.	Pin Name	I/O	Description
1	FOK	I	Focus OK input terminal. Used for SENS output and servo auto sequencer.
2	FSW	O	Spindle motor output filter selection output.
3	MON	O	Spindle motor ON-OFF control output.
4	MDP	O	Spindle motor servo control.
5	MDS	O	Spindle motor servo control.
6	LOCK	O	H output when GFS is sampled at 460 Hz and GFS is H. L output when L is continuously 8 times.
7	NC	—	Not used.
8	VCOO	O	Oscillator circuit output for analog EFM PLL.
9	VCOI	I	Oscillator circuit input for analog EFM PLL. fLOCK = 8.6436 MHz.
10	TEST	I	TEST terminal. Normally GND.
11	PDO	O	Charge pump output for analog EFM PLL.
12	VSS	—	GND.
13	NC	—	Not used.
14	NC	—	Not used.
15	NC	—	Not used.
16	VPCO	O	Charge pump output for vari-pitch PLL.
17	VCKI	I	Clock input from external VCO for vari-pitch. fc center = 16.9344 MHz.
18	FILO	O	Filter output for master PLL (slave = digital PLL).
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for
21	AVSS	—	Analog GND.
22	CLTV	I	VCO control voltage input for master.
23	AVDD	—	Analog power supply. (+3.5 V)
24	RF	I	EFM signal input.
25	BIAS	I	Asymmetry circuit constant current input.
26	ASYI	I	Asymmetry comparate voltage input.
27	ASYO	O	EFM full swing output (L = Vss, H = VDD.)
28	ASYE	I	L: asymmetry circuit OFF, H: asymmetry circuit ON.
29	NC	—	Not used.
30	PSSL	I	Audio data output mode selection input. Serial output at L, parallel output at H.
31	WDCK	O	D/A interface for 48-bit slot. Word clock f = 2 Fs.
32	LRCK	O	D/A interface for 48-bit slot. LR clock f = Fs.
33	VDD		Power supply. (+3.5 V)
34	S DATA	O	DA16 (MSB) output when PSSL = H. 48-bit slot serial data when PSSL = L. (2's COMP, MSB first).
35	BCLK	O	DA15 output when PSSL = H. 48-bit slot bit clock when PSSL = L.
36	NC	O	DA14 output when PSSL = H. 64-bit slot serial data when PSSL = L. (2's COMP, MSB first).
37	NC	O	DA13 output when PSSL = H. 64-bit slot bit clock when PSSL = L.
38	NC	O	DA12 output when PSSL = H. 64-bit slot LR clock when PSSL = L.

Pin No.	Pin Name	I/O	Description
39	GTOP	O	DA11 output when PSSL = H. GTOP output when PSSL = L.
40	XUGF	O	DA10 output when PSSL = H. XUGF output when PSSL = L.
41	XPLCK	O	DA09 output when PSSL = H. XPLCK output when PSSL = L.
42	GFS	O	DA08 output when PSSL = H. GFS output when PSSL = L.
43	RFCK	O	DA07 output when PSSL = H. RFCK output when PSSL = L.
44	C2PO	O	DA06 output when PSSL = H. C2P0 output when PSSL = L.
45	XRAOF	O	DA05 output when PSSL = H. XRAOFoutput when PSSL = L.
46	MNT3	O	DA04 output when PSSL = H. MNT3 output when PSSL = L.
47	MNT2	O	DA03 output when PSSL = H. MNT2 output when PSSL = L.
48	MNT1	O	DA02 output when PSSL = H. MNT1 output when PSSL = L.
49	MNT0	O	DA01 output when PSSL = H. MNT0 output when PSSL = L.
50	APTR	O	Aperture correction control output. H when R channel.
51	APTL	O	Aperture correction control output. H when L channel.
52	VSS	—	GND.
53	XTAI	I	Input to 16.9344 MHz X'tal oscillator circuit. or 33.8688 MHz input.
54	XTAO	O	16.9344 MHz X'tal oscillator output.
55	XTSL	I	X'tal selection input. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
56	FSTT	O	2/3 divider output of the pins 53 and 54. Does not change with vari-pitch.
57	C4M	O	4.2336 MHz output. When vari-pitch is performed, it changes too.
58	C16M	O	16.2336 MHz output. When vari-pitch is performed, it changes too.
59	MD2	I	Digital-out ON/OFF control. ON at H, OFF at L.
60	DOUT	O	Digital-out terminal.
61	EMPH	O	H output when the playback disc has emphasis. L output without emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	H output when S0 or S1 of the subcode sync is detected.
64	SBSO	O	Serial output of Sub P to W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	SubQ 8-bit and PCM peak level data. 16-bit output.
67	SQCK	I	Clock input for SQSO readout.
68	MUTE	I	Mute at H. Release at L.
69	SENS	O	SENS output. Output to CPU.
70	XRST	I	System reset. Reset at L.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. Latches serial data at fall-down edge.
73	VDD	—	Power supply (+3.5 V).
74	CLOK	I	Serial data transfer clock input from CPU.
75	SEIN	I	Sensor input from SSP.
76	CNIN	I	Track jump number counted signal input.
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. Latches at fall-down edge.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input. Used for jump of 128 track or more at auto sequencer.

IC, µPD78044BGF

Pin No.	Pin Name	I/O	Description
1	DO ON	O	Digital output. ON/OFF output.
2~7	NC	—	Not used.
8	VDD	—	PWR. +5 V power supply.
9	CM CLK	I/O	Serial clock I/O.
10	C DATA	O	Serial data output.
11	M DATA	I	Serial data input.
12	O-CLK	O	DSP serial clock output.
13	O-XLT	O	DSP serial latch output.
14	O-SQCLK	O	DSP sub Q read-out clock output.
15	O-DATA	O	DSP serial data output.
16	I-SQDATA	I	DSP sub Q data input.
17	$\overline{\text{RESET}}$	I	System reset input.
18	I-SENS	I	DSP SENS input.
19	XRST	O	CD system reset output.
20	AVSS	—	PWR. GND potential of A/D converter input.
21	I-FOK	I	ASP FOK input.
22	I-GFS	I	DSP GFS input.
23	—	—	Connected GND.
24	I-ILSW	I	Pickup limit switch input.
25	I-OCSW	I	Tray OPEN/CLOSE switch input.
26~28	—	—	Connected GND.
29	AVDD	—	PWR. Analog power supply of A/D converter input.
30	AVREF	I	PWR. Reference voltage input of A/D converter input.
31	—	—	Connected GND.
32	NC	—	Open terminal.
33	VSS	—	PWR. GND potential.
34	X1	I	CLK. Terminal for 4.19 MHz clock oscillator.
35	X2	O	CLK. Terminal for 4.19 MHz clock oscillator.
36~38	NC	—	Not used.
39	$\overline{\text{C-BUSY}}$	O	MPEG status output.
40	MSTBY	I	Main microprocessor status input.
41	CLOCK	O	Main microprocessor serial clock output.
42	DATA	O	Main microprocessor serial data output.
43	D-REQ	O	Main microprocessor status output.
44	I-KEY	I	Main microprocessor serial data input.
45	SCOR	I	DSP SCOR input.
46	$\overline{\text{M-BUSY}}$	I	MPEG status signal input.
47	—	—	Connected GND.
48	IC	—	PWR. Connected to Vss.
49	MUTE L	O	L channel analog mute output.
50	MUTE R	O	R channel analog mute output.

Pin No.	Pin Name	I/O	Description
51	DSENS	I	Turntable sensor input.
52	VDD	—	PWR. +5 V power supply.
53~64	NC	—	Not used.
65	O-TOPN	O	Tray OPEN output.
66	O-CLS	O	Tray CLOSE output.
67	O-DFWD	O	Turntable forward rotation output.
68	O-DRVS	O	Turntable reverse rotation output.
69, 70	NC	—	Not used.
71	VLOAD	—	PWR. -27 V power supply for FL pull-down.
72~76	NC	—	Not used.
77	VCD	O	VIDEO CD selection output.
78	$\overline{\text{CD FUNC}}$	O	CD function selection output.
79	G-MUT	O	CDG mute output.
80	CD ON	O	FL. Digit output for FL display.

IC, LC7872E

Pin No.	Pin name	I/O	Description
1, 2	S1, S2	—	DSP select pin for CD. (Connected to VDD)
3	SBCK	O	Subcode read/write clock.
4	SFSY	I	Subcode frame sync signal.
5	PW	I	Subcode read/write data.
6	SBSY	I	Subcode block sync signal.
7	VDD1	—	Power supply for digital block. (Connected to +5V)
8	CE	I	Control pin when serial input or serial output. (Connected to GND)
9	DO	O	Serial data output. (Connected to GND)
10	DI	I	Serial data input. (Connected to GND)
11	CL	I	Clock when inputting/outputting serial data. (Connected to GND)
12	MUTE	I	Control signal disabling the subcode.
13	VSS1	—	GND for digital block.
14	$\overline{\text{WE}}$	O	DRAM control pin.
15	$\overline{\text{RAS}}$	O	DRAM control pin.
16~23	A0~A7	O	DRAM address pin.
24	DB0	I/O	DRAM data pin.
25	$\overline{\text{CAS}}$	O	DRAM control pin.
26	DB1	I/O	DRAM data pin.
27	$\overline{\text{DE}}$	O	DRAM control pin.
28	DB2	I/O	DRAM data pin.
29	DB3	I/O	DRAM data pin.
30	CE	I	"L": Normal mode "H": Color bar output (Not used)
31	CDGM	O	"H" output when CDG disk. (Not used)
32	TRANS0	O	Transparency digital output. (Not used)
33	TRANS1	O	Transparency digital output. (Not used)
34	TRANS2	O	Transparency digital output. (Not used)
35	TRANS3	O	Transparency digital output. (Not used)
36	TRANS4	O	Transparency digital output. (Not used)
37	TRANS5	O	Transparency digital output. (Not used)
38	VSS2	—	Composite video DAC GND pin.
39	VDD2	—	Composite video DAC power supply pin. (Connected to +5V)
40	BIAS	O	Capacitor connecting pin for eliminating ripple.
41	VIDEO	O	Composite video output pin (8-bit DAC output).
42	TEST	I	Test pin. Set to "L" normally. (Connected to GND)
43	LINE	I	When NP2 pin is "H": H: 263H L: 262H When NP2 pin is "L": H: 312H L: 314H (Not used)
44	FSCIN	I	Subcarrier clock input pin. (feedback resistor is built in) (Connected to GND)
45	VSYNC	O	Vertical sync signal output pin. (Not used)
46	TEST1	I	Test pin. Set to "L" normally. (Connected to GND)
47	YS	O	Superimpose control output. (Not used)
48	$\overline{\text{CSTNC}}$	O	Composite sync signal output. (Not used)

Pin No.	Pin name	I/O	Description
49	GND	—	GND.
50	EFLG	O	Error status monitor pin. (Not used)
51	FSX	O	For error status monitor trigger. (Not used)
52	DEN	I	Disk information display enable. H: BGC L: Enable (Connected to GND)
53	PALID	I	External control pin when superimposing with PAL (pull-up resistor is built in). (Not used)
54	VDD3	—	Digital power supply (+5V)
55	FSC	O	Subcarrier clock output. NTSC mode: 3.579545 MHz PAL mode: 4.433619 MHz (Not used)
56	VDD4	—	Digital power supply (+5V)
57	$\overline{\text{RESET}}$	I	Reset input pin.
58	N/$\overline{\text{P}}$1	I	NTSC/PAL selection pin. (RGB encoder) "H": NTSC "L": PAL
59	N/$\overline{\text{P}}$2	I	NTSC/PAL selection pin. (CD-G decoder) "H": NTSC "L": PAL
60	SON	I	Superimpose ON/OFF pin. (Connected to GND)
61	XIN2	I	Crystal oscillator 17.734476 MHz. (for PAL)
62	XOUT2	O	Crystal oscillator 17.734476 MHz. (for PAL)
63	XIN1	I	Crystal oscillator connection 14.31818 MHz. (for NTSC)
64	XOUT1	O	Crystal oscillator connection 14.31818 MHz. (for NTSC)

IC, CXA1782BQ

Pin No.	Pin name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	—	+ 5 V power supply pin.
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU .
22	XRST	I	Reset input pin. Reset at L.
23	COUT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command from CPU .
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled.
31	RFO	O	RF summing amplifier output pin. (Eye pattern check point)
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.

Pin No.	Pin name	I/O	Description
33	LD	O	APC amplifier output pin.
34	PHD	I	APC amplifier input pin.
35~36	PHD1~2	I	RF I-V amplifier inverted input pin. These pins are connected to the A+C and B+D pins of the optical pickup.
37	FE BIAS	I	Bias adjustment pin of the focus error amplifier.
38~39	F~E	I	F and E IV amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	—	Gain adjustment pin of the I-V amplifier E.
41	VEE	—	GND connection pin
42	TEO	O	Tracking error amplifier output pin. E-F signal is output.
43	LPFI	I	BAL adjustment comparator input pin.
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

IC, CL480

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11~15	HD3~HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23~28	MD0~MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34~37	MD8~MD11	I/O	Memory data bus.
38	VSS	—	GND.
39~42	MD12~MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53~57	MA9~MA5	O	Memory address bus.
58	VSS	—	GND.
59~63	MA4~MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66~72	VD0~VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS		GND.
74~76	VD7~VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78~80	VD10~VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3		Power supply pin. Used in 3.3 V.
82~84	VD13~VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86~89	VD16~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91~94	VD20~VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	RESERVED	—	Reserved.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	RESERVED	—	Reserved.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	RESERVED	—	Reserved.
121	-FMV_DET	O	FMV detection. L: FMV detected.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	RESERVED	—	Reserved.
125	VSS	—	GND.
126	RESERVED	—	Reserved.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, CXD1178Q

Pin No.	Pin Name	I/O	Description
1~8	R0~R7	I	Digital input.
9~16	G0~G7		
17~24	B0~B7		
25	BLK	I	Blanking pin. No signal at "H" (Output 0V). Output condition at "L".
26	$\overline{\text{CE}}$	I	Chip enable pin. No signal (Output 0V) at "H" and minimizes power consumption.
27	RCK	I	Clock pin. Moreover all input pins are TTL-CMOS compatible.
28	GCK		
29	BCK		
30, 31	DVSS	—	Digital GND.
32	VB	O	Connect a capacitor of about 0.1μF.
33	AVSS	—	Analog GND.
34	VREF	I	Set full scale output value.
35	IREF	I	Connect a resistance 16 times "16R" that of output resistance value "R".
36	$\overline{\text{RO}}$	O	Inverted current output pin. Normally dropped to analog GND.
37	RO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
38	$\overline{\text{GO}}$	O	Inverted current output pin. Normally dropped to analog GND.
39	GO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
40	$\overline{\text{BO}}$	O	Inverted current output pin. Normally dropped to analog GND.
41	BO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
42	VG	I	Connect a capacitor of about 0.1μF.
43~46	AVDD	—	Analog VDD.
47, 48	DVDD	—	Digital VDD.

IC, MC68HC705

Pin No.	Pin Name	I/O	Description
1	RST	I	Reset.
2	IRQ	I	MPEG DECODER request signal.
3	VPP	—	ROM write power.
4~11	PA7~PA0	I/O	MPEG DECODER data bus 7~0.
12~14	PB0~PB2	O	MPEG DECODER register select 0~2.
15	PB3	O	MPEG DECODER data R/W select.
16	PB4	O	MPEG DECODER data strobe.
17	PB5	I	MPEG DECODER data acknowledge.
18	PB6	I	CD-I bit stream detect.
19	PB7	I	CD DA/VCO select.
20	VSS	—	Power ground.
21	PC7	I	MPEG DECODER FIFO status.
22, 23	PC6, PC5	—	Not used.
24	PC4	O	MPEG DECODER reset signal.
25, 26	PC3, PC2	—	Not used.
27, 28	PC1, PC0	O	Key scan out 1, 0.
29	RDI	—	Not used.
30	TD$\overline{\text{O}}$		
31~34	PD2~PD5	I	Key scan input 0~3.
35	TCMP	O	Remote data out.
36	PD7	—	Not used.
37	CAP	I	Remote data in.
38, 39	OSC2, OSC1	I	X_tal in.
40	VDD	—	Power 5V.

IC, µPD6376

Pin No.	Pin Name	I/O	Description
1	FS-SEL	I	As this terminal is "Low" or open, L-ch data and R-ch data are inputted for serial data by the pin 15. As this terminal is "High", L-ch data is inputted by the pin 15, R-ch data is inputted by the pin 14. (Pull-downed by the 100 kΩ resistance in IC.)
2	D. GND	—	Ground terminal for the logic circuit.
3	NC	—	—
4	D. VDD	—	Power supply terminal for the logic circuit .
5	A. GND	—	Ground terminal for the analog circuit.
6	R. OUT	O	Output terminal for the right analog signal.
7, 8	A. VDD	—	Power supply terminal for the analog circuit.
9, 10	R. REF, L. REF	—	Operational Amplifier reference bias terminal. Normally connected to A.GND via a capacitor.
11	L. OUT	O	Output terminal for the left analog signal.
12	A. GND	—	Ground terminal for the analog circuit.
13	LRCK	I	As the pin 1 is "Low" or open, this is input terminal for left/right identification signal. As the pin 1 is "High", this is input terminal for word identification signal of input data.
14	LRSEL	I	As the pin 1 is "Low" or open, this is left/right selection terminal for LRCK signal. At "High" of LRCK signal, set LRSEL pin at "Low" for L-ch DATA input. At "Low" of LRCK signal, set LRSEL pin at "High" for L-ch DATA input. As the pin 1 is "High", this is input terminal for R-ch serial data.
15	DATA	I	As the pin 1 is "Low" or open, this is input terminal for L-ch and R-ch serial data. As the pin 1 is "High", this is input terminal for L-ch serial data.
16	BCK	I	Input terminal for read clock of serial input data.

IC, CXA1645M

Pin No.	Pin Name	I/O	Description
1	GND	—	GND.
2	RIN	I	Analog RGB input terminals.
3	GIN		
4	BIN		
5	NC	—	N. C.
6	SCIN	I	Subcarrier input terminal.
7	NPIN	I	NTSC, PAL mode select terminal. NTSC: Vcc, PAL: GND.
8	BFOUT	O	Output terminal to monitor the BF pulse. Unable to drive 75 Ω load.
9	YCLPC	—	External time constant for Y signal clamp is connected to this terminal.
10	SYNCIN	I	Composite sync signal input terminal. Input at TTL level. SYNC period at L (≦ 0.8 V). H (≧ 2.0 V).
11	NC	—	N. C.
12	VCC	—	Power supply terminal.
13	IREF		Terminal which determines internal reference current.
14	VREF	—	Internal reference voltage terminal.
15	COUT	O	Chroma signal output terminal.
16	YOUT	O	Y signal output terminal.
17	YTRAP	I	Terminal to reduce cross-color due to subcarrier frequency component included in the Y signal.
18	FO	I	fo adjustment terminal of internal filter. The following resistor is connected between GND depending upon NTSC or PAL mode. NTSC: 20 kΩ (±1%) PAL: 16 kΩ (±1%).
19	VCC	—	Power supply terminal.
20	CVOUT	O	Composite video signal output terminal.
21	BOUT	O	Analog RGB signal output terminal
22	GOUT		
23	ROUT		
24	GND	—	GND.

IC, HD6433042F06F

Pin No.	Pin Name	I/O	Description
1	VCC	I	Power supply.
2	CDG DIN	O	CD-G decoder serial data signal.
3	CDG XLT	O	CD-G decoder latch signal.
4	CDG CLK	O	CD-G decoder clock signal.
5~7	GADSP0~2	O	Gate array DSP format 0~2.
8	$\overline{\text{DRQ CDDEC}}$	I	CD-ROM decoder data request signal.
9	$\overline{\text{DRQ MPEG}}$	I	MPEG decoder data request signal.
10	$\overline{\text{RESO}}$	O	External reset output.
11	GND	I	GND.
12	TXD0	O	Serial interface (RXD).
13	TXD1	O	CXD for test.
14	RXD0	I	Serial interface (RXD).
15	RXD1	I	RXD for test.
16	SCK0	I/O	Serial interface (SCK).
17	$\overline{\text{MPRST}}$	O	Peripheral reset. L: RESET ON.
18~21	D0~D3	I/O	Data bus 0~3.
22	GND	I	GND.
23~34	D4~D15	I/O	Data bus 4~15.
35	VCC	I	Power supply.
36~43	A0~A7	O	Address bus 0~7.
44	GND	I	GND.
45~56	A8~A19	O	Address bus 8~19.
57	GND	I	GND.
58	$\overline{\text{WAIT}}$	I	External wait signal.
59	GLUE ON	O	DMA glue circuit enable 0: OFF. 1: ON.
60	M EMPH	O	MPEG AUDIO emphasis 0: OFF. 1: ON.
61	FAI	O	System clock output.
62	$\overline{\text{STBY}}$	I	Standby. (Hardware standby mode at low level).
63	$\overline{\text{RES}}$	I	Reset input. (Reset at low).
64	NMI	I	Non-maskable interrupt. (Non-maskable interrupt is requested).
65	GND	I	GND.
66	EXTAL	I	External crystal is connected to this pin.
67	XTAL	I	External crystal is connected to this pin.
68	VCC	I	Power supply.
69	$\overline{\text{AS}}$	O	Address strobe signal.
70	$\overline{\text{RD}}$	O	External address read enable signal.
71	$\overline{\text{HWR}}$	O	External address high write enable signal.
72	$\overline{\text{LWR}}$	O	External address low write enable signal.
73~75	MOD0~MOD2	I	Mode terminal. Operating mode is set using this terminal.
76	AVCC	I	Power supply terminal of A/D converter and D/A converter.
77	VREF	I	Reference voltage input to A/D converter and D/A converter.

Pin No.	Pin Name	I/O	Description
78, 79	P70, P71	I	IN port 0, 1 for test.
80	PAL/$\overline{\text{NTSC}}$	I	PAL/NTSC status 0: NTSC. 1: PAL.
81	$\overline{\text{REQ CD}}$	I	Serial interface (REQ_CD).
82~85	P74~P77	I	Reserve.
86	AGND	I	GND terminal of A/D converter and D/A converter.
87	$\overline{\text{INT CDDRV}}$	I	Serial interface interrupt.
88	$\overline{\text{INT CDDEC}}$	I	CD-ROM decoder interrupt.
89	$\overline{\text{INT MPEG}}$	I	MPEG decoder interrupt.
90	$\overline{\text{IRQ3}}$	I	Reserve.
91	P84	I	Reserve.
92	GND	I	GND.
93	$\overline{\text{DONE CDDEC}}$	O	CD-ROM decoder DONE signal.
94	$\overline{\text{DONE MPEG}}$	O	MPEG decoder DONE signal.
95	CDG VOFF	O	CD-G decoder video OFF signal. 1: VOFF.
96	SYS MUTE1	O	Audio mute 1 signal. 1: mute ON.
97	INTFLDO	I	EVEN/OFF input signal. 0: EVEN. 1: 0DD.
98	SW AUDIO	O	Audio select signal. 0: CD-G/DA. 1: MPEG.
99	$\overline{\text{SYS MUTE0}}$	O	Audio mute 0 signal. 0: mute on.
100	$\overline{\text{REQ MPEG}}$	O	Serial interface (REQ MPEG)

IC, μPD65622GF-239-3B9

Pin No.	Pin Name	I/O	Description
1	LRCKCD	O	Main data signal to CXD1186.
2	SDATACD	O	
3	BCKCD	O	
4	C2POCD	O	
5	$\overline{\text{CSROMH}}$	O	Chip select signal to CXD1186 (host side).
6	$\overline{\text{CSROMC}}$	O	Chip select signal to CXD1186 (CPU side).
7	$\overline{\text{DACKROM}}$	O	DMA acknowledge signal to CXD1186.
8	HDRQ	I	Data transfer request signal from CXD1186. This signal is active high.
9	$\overline{\text{ROMRD}}$	O	Read/write signal to CXD1186.
10	$\overline{\text{ROMWR}}$	O	Read/write signal to CXD1186.
11	EMPHI	I	This signal allows inputting the main data from the CD drive.
12	GND	—	GND.
13	SDATAI	I	This signal allows inputting the main data from the CD drive.
14	BCKI	I	
15	LRCKI	I	
16	C2POI	I	
17	GND	—	GND.
18	16.9M	I	16.9344 MHz oscillator circuit input signal.
19	16.9F	O	16.9344 MHz oscillator circuit output signal.
20	GND	—	GND.
21	GSFSY	I	Write frame clock signal used to input the sub data from CD drive.
22	EMPO	O	Main data signal to CXD1186.
23	LRCKO	O	Audio data signal to audio DAC.
24	SDATAO	O	Audio data signal to audio DAC.
25	RESET	O	Active high reset signal.
26	GND	—	GND.
27	BCKCO	O	Audio data signal to audio DAC.
28	$\overline{\text{GGLUE}}$	I	The input signal which makes the glue circuit valid from GSFSY input.
29	$\overline{\text{GGSFSY}}$	O	Not used.
30	SDATAMA	I	Audio data signal from μPD61010.
31	BCKMA	I	
32	LRCKMA	I	
33	GND	—	GND.
34	VCC	—	Vcc.
35	$\overline{\text{16.9M}}$	O	16.9344 MHz output signal.
36	GND	—	GND.
37	$\overline{\text{DS}}$	O	Control signal to μPD61010.
38	$\overline{\text{CSMPEG}}$	O	Chip select signal to CXD1186.
39	R/$\overline{\text{W}}$	O	Control signal to μPD61010.
40	INT	I	Interrupt request signal from μPD61010. This signal is active high.
41	$\overline{\text{HDAK}}$	I	Data acknowledge signal from μPD61010.

Pin No.	Pin Name	I/O	Description
42	$\overline{\text{DREQ}}$	I	DRAM data transfer request signal from µPD61010.
43	$\overline{\text{DACKMP}}$	O	DMA acknowledge signal to µPD61010.
44	$\overline{\text{DAK}}$	I	Bit stream data transfer request signal from µPD61010.
45	$\overline{\text{CSCELL}}$	O	Chip select signal to standard cell.
46	GND	—	GND.
47	$\overline{\text{RESET}}$	I	System reset signal.
48	GND	—	GND.
49	$\overline{\text{CSRAM}}$	O	Chip select signal to the system RAM.
50	$\overline{\text{LWR}}$	I	Lower data write signal from CPU.
51	$\overline{\text{HWR}}$	I	Upper data write signal from CPU.
52	$\overline{\text{RD}}$	I	Data read signal from CPU.
53	GND	—	GND.
54	$\overline{\text{AS}}$	I	Address strobe signal from CPU.
55	$\overline{\text{CSIO}}$	O	Optional chip select signal.
56~63	A19~A12	I	Address signal from CPU.
64	GND	—	GND.
65	$\overline{\text{WAIT}}$	O	Wait signal to CPU.
66	GLUEON	I	This signal makes the glue logic valid in order to prevent CPU DMAC from trouble. This circuit is made valid at high.
67	$\overline{\text{SEL12}}$	I	Input signal to select 12 MHz or 16 MHz CPU clock.
68	EMPMA	I	Audio data signal from µPD61010.
69	GND	—	GND.
70	FAI	I	Basic clock signal (12 MHz) from CPU.
71	GND	—	GND.
72	VCC	—	Vcc.
73	GND	—	GND.
74	$\overline{\text{INTMPEG}}$	O	Interrupt request signal to CXD1186.
75	SWAUDIO	I	Selection signal between MPEG audio and CD-DA audio signals.
76	$\overline{\text{DRQ1}}$	O	DMA transfer request signal to µPD61010.
77	$\overline{\text{DRQ0}}$	O	DMA transfer request signal to CXD1186.
78~80	GADSP2~0	I	Format select signal to convert format of the main data from CD drive.

IC, CXD1186CR

Pin No.	Pin Name	I/O	Description
1~4	A0~A3	I	CPU address signal.
5	HMDS	I	Host mode select signal.
6, 7	HA0, HA1	I	Host address signal.
8	XHCS	I	Chip select negative logic signal from the host.
9	HINT	O	Interrupt request negative logic signal to the host.
10	GND	—	GND.
11	XHRD	I/O	Data read strobe signal from the host or to the SCSI control IC.
12	XHWR	I/O	Data write strobe signal from the host or to the SCSI control IC.
13~20	HDB0~HDB7	I/O	Host data bus.
21	GND	—	GND.
22	HDBP	I/O	Error flag. Host data bus.
23	XRST	I	Reset negative logic signal.
24	HDRQ	O	Data request positive logic signal to the host. Or DMA acknowledge negative logic signal to the SCSI control IC.
25	XHAC	I	DMA acknowledge negative logic signal from the host Or data request positive logic signal from the SCSI control.
26	XTC	I	Terminal count negative logic signal.
27	ADRQ	I	DMA request positive logic signal from ADP.
28	XAAC	O	DMA acknowledge negative logic signal to ADP.
29, 30	BA0, BA1	O	Buffer memory address.
31	VDD	—	Power supply (+5 V) terminal.
32~39	BA2~BA9	O	Buffer memory address.
40	GND	—	GND.
41~46	BA10~BA15	O	Buffer memory address.
47	XMOE	O	Buffer memory output enable negative logic signal.
48	XMWR	O	Buffer memory write negative logic signal.
49	BDB0	I/O	Buffer memory data bus.
50	GND	—	GND.
51~57	BDB1~BDB7	I/O	Buffer memory data bus.
58	BDBP	I/O	Buffer memory pointer data bus.
59	XTL2	O	X'TAL oscillator circuit output terminal.
60	XTL1	I	X'TAL oscillator input terminal.
61	GND	—	GND.
62	HCLK	O	X'TAL 1 divided-by-2 clock signal.
63	LRCK	I	LR clock from CD player.
64	DATA	I	Serial data from CD player.
65	BCLK	I	Bit clock from CD player.
66	C2P0	I	C2 pointer from CD player.
67~70	DB0~DB3	I/O	CPU data bus.
71	VDD	—	Power supply (+5 V) terminal.
72~75	DB4~DB7	I/O	CPU data bus.

Pin No.	Pin Name	I/O	Description
76	XCS	I	Chip select negative logic signal from CPU.
77	XRD	I	IC internal register read-out strobe negative logic signal from CPU.
78	XWR	I	IC internal register write strobe negative logic signal from CPU.
79	INT	O	Interrupt request signal to CPU.
80	GND	—	GND.

IC, TLC29321PW

Pin No.	Pin Name	I/O	Description
1	VDD	—	Power supply terminal to the internal logic circuit.
2	VCO LS	I	VCO output frequency divide-by-2 divider select terminal. The VCO output frequency can be divided by 2 and output as this terminal is controlled by external logic.
3	VCOO	O	VCO output terminal. Goes to low level during inhibit.
4, 5	FIN-A, FIN-B	I	2 input terminal for edge difference detection between the reference frequency (fREF-IN) and the frequency from external counter. The fREF-IN is input to the FIN-A terminal normally, and the divided or multiplied frequency from external counter is input to the FIN-B terminal.
6	PFDO	O	PFD output terminal.
7	GND	—	Internal logic circuit GND terminal.
8	NC	—	N.C.
9	PFDIH	I	PFD inhibit function control terminal.
10	VCOIH	I	VCO inhibit function control terminal.
11	A GND	—	VCO GND.
12	VCOI	I	VCO control voltage input. The VCO oscillator control voltage is input from an external low-pass filter to form PLL.
13	RBIAS	I	External resistor is connected to this terminal for setting the VCO oscillation frequency. A bias resistor is connected between this terminal and power supply line to supply bias for internal VCO oscillation and for setting and adjusting the oscillating frequency.
14	A VDD	—	VCO power supply voltage terminal.

IC, HD49307

Pin No.	Pin No.	I/O	Description
1～5	G4～G8	I	Digital input terminal.
6	B1	—	N. C.
7	NC	I	Digital input terminal.
8～12	B2～B6	I	Digital input terminal.
13～15	NC	—	N. C.
16, 17	B7, B8	I	Digital input terminal.
18	NC	—	N. C.
19	RCLK	I	R channel clock input.
20	GCLK	I	G channel clock input.
21	BCLK	I	B channel clock input.
22	DVSS	—	Digital GND.
23	DVDD	—	Digital power supply.
24	NC	—	N. C.
25	CBU	—	External phase compensation capacitance connection terminal.
26	CBL	—	Bypass capacitance connection terminal.
27～29	NC	—	N. C.
30	VRREF	I	Reference voltage input terminal.
31	AVSS	—	Analog GND.
32	AVDD	—	Analog power supply.
33	BOUT	O	B channel analog signal output terminal.
34	AVDD	—	Analog power supply.
35	NC	—	N. C.
36	GOUT	O	G channel analog signal output terminal.
37	AVDD	—	Analog power supply.
38	ROUT	O	R channel analog signal output terminal.
39	AVSS	—	Analog GND.
40	AVDD	—	Analog power supply.
41	DVDD	—	Digital power supply.
42	R1	I	Digital input terminal.
43～44	NC	—	N. C.
45～51	R2～R8	I	Digital input terminal.
52～54	G1～G3	I	Digital input terminal.
55, 56	NC	—	N. C.

IC, µPD61010

Pin No.	Pin Name	I/O	Description
1	VDD	—	+5 V power supply.
2~6	HD9~5	I/O	Host data bus.
7	VDD	—	+5 V power supply.
8	GND	—	GND.
9~13	HD4~0	I/O	Host data bus.
14	VDD	—	+5 V power supply.
15	GND	—	GND.
16	$\overline{\text{DREQ}}$	O	DMA request signal.
17	$\overline{\text{DACK}}$	I	DMA acknowledge signal.
18	HSEL	I	Signal to select the host CPU access method.
19	DRQ	I	Data input request for bit stream input from CD-ROM decoder.
20	VDD	—	+5 V power supply.
21	GND	—	GND.
22	$\overline{\text{DAK}}$	O	Data input response for bit stream input from CD-ROM decoder, or DMA input request for code input.
23	$\overline{\text{DRD}}$	O	Bit stream input approval signal.
24, 25	NC	—	N. C.
26~33	CD0~7	I	Data bus for bit stream input from CD-ROM decoder.
34	VDD	—	+5 V power supply.
35	GND	—	GND.
36~39	MD7~4	I/O	DRAM data bus.
40	VDD	—	+5 V power supply.
41, 42	GND	—	GND.
43~46	MD3~0	I/O	DRAM data bus.
47, 48	MD15, 14	I/O	DRAM data bus.
49	VDD	—	+5 V power supply.
50	GND	—	GND.
51~56	MD13~8	I/O	DRAM data bus.
57	VDD	—	+5 V power supply.
58	GND	—	GND.
59~64	MA0~5	O	DRAM address bus.
65	VDD	—	+5 V power supply.
66	GND	—	GND.
67~69	MA6~8	O	DRAM address bus.
70	$\overline{\text{RAS 1}}$	O	DRAM RAS signal.
71	$\overline{\text{RAS 0}}$	O	DRAM RAS signal.
72	$\overline{\text{CAS}}$	O	DRAM CAS signal.
73	VDD	—	+5 V power supply.
74	$\overline{\text{WE}}$	O	Write enable to DRAM.
75~77	NC	—	N. C.
78	VOE	I	Video data output enable.

Pin No.	Pin Name	I/O	Description
79, 80	GND	—	GND.
81	VDD	—	+5 V power supply.
82	NC	—	N. C.
83	FLDI	I	Field signal (odd/even)
84	HDI	I	Horizontal sync signal.
85	VDI	I	Vertical sync signal.
86	VDCLK	I	Video data output clock (13.5 MHz).
87	VDD	—	+5 V power supply.
88~91	VDATA23~20	O	Video data output bus.
92	GND	—	GND.
93	VDD	—	+5 V power supply.
94~97	VDATA19~16	O	Video data output bus.
98, 99	VDATA15, 14	O	Video data output bus.
100	VDD	—	+5 V power supply.
101	GND	—	GND.
102~105	VDATA13~10	O	Video data output bus.
106	VDD	—	+5 V power supply.
107	GND	—	GND.
108~112	VDATA9~5	O	Video data output bus.
113	VDD	—	+5 V power supply.
114	GND	—	GND.
115~119	VDATA4~0	O	Video data output bus.
120	VDD	—	+5 V power supply.
121, 122	GND	—	GND.
123	DO	O	Video data output bus.
124	BCK	O	Video data output clock.
125	LRCK	O	L/R channel identification signal.
126	MCLK	O	Audio master clock.
127	NC	—	N. C.
128	AUCLK	I	Internal audio decoder system clock.
129	VDD	—	+5 V power supply.
130~132	NC	—	N. C.
133	VDD	—	+5 V power supply.
134	$\overline{\text{RESET}}$	I	Reset signal.
135	CLK	I	System clock (27 MHz)
136	GND	—	GND.
137	$\overline{\text{DS}}$	I	Data strobe signal.
138	R/$\overline{\text{W}}$	I	Read/write select.
139	$\overline{\text{CS}}$	I	Chip select.
140~145	HADR0~5	I	Host address bus.
146, 147	GND	—	GND.

Pin No.	Pin Name	I/O	Description
148	INT	O	Interrupt signal.
149	$\overline{\text{HDAK}}$	O	Bus cycle response signal.
150	VDD	—	+5 V power supply.
151	GND	—	GND.
152~157	HD15~10	I/O	Host data bus.
158	VDD	—	+5 V power supply.
159, 160	GND	—	GND.

IC, µPD63210GT

Pin No.	Pin Name	I/O	Description
1	TSEL	I	Test selection input.
2	RST	I	Reset input.
3	XTO	O	External crystal oscillator is connected to this pin.
4	XTI	I	External crystal oscillator is connected to this pin.
5	MCKO	O	Master clock output.
6	CKSEL	I	Clock selection input.
7	CLK	I	Bit clock input.
8	SI	I	Data input.
9	LRCK	I	LR clock input.
10	DEFS1	I	Deemphasis selection input 1.
11	DEFS2	I	Deemphasis selection input 2.
12	DSEL	I	Double speed playback selection input..
13	SMUTE	I	Soft mute selection input.
14	BSEL	I	Data bit length selection input.
15	DGND	—	Digital GND.
16	AGND	—	Analog GND.
17	RO	O	D/A converter output (R channel).
18	AOR	O	Filter amplifier output (R channel).
19	ANIR	I	Filter amplifier (-) input (R channel).
20	APIR	I	Filter amplifier (+) input (R channel).
21	RREF	—	Reference (R channel).
22	LREF	—	Reference (L channel).
23	APIL	I	Filter amplifier (+) input (L channel).
24	ANIL	I	Filter amplifier (-) input (L channel).
25	AOL	O	Filter amplifier output (L channel).
26	LO	O	D/A converter output (L channel).
27	AVDD	—	Analog power supply.
28	DVDD	—	Digital power supply.

IC, TC170C100AF

Pin No.	Pin Name	I/O	Description
1～5	YIN4～0	I	Y signal from MPEG chip.
6	GND	—	GND.
7～14	UIN7～0	I	U signal from MPEG chip.
15	GND	—	GND.
16, 17	VIN7, 6	I	V signal from MPEG chip.
18	VCC	—	Power supply terminal.
19～24	VIN5～0	I	V signal from MPEG chip.
25	GND	—	GND.
26	FLDO	O	Odd/even signal output of a field.
27	$\overline{\text{HDO}}$	O	$\overline{\text{HSYNC}}$ signal to MPEG chip.
28	$\overline{\text{VDO}}$	O	$\overline{\text{VSYNC}}$ signal to MPEG chip.
29	PCP	O	Clamp signal output.
30	CBLK	O	Blanking signal output (used depending upon type of DAC).
31	GND	—	GND.
32	FSC	O	Sub carrier output (Divided-by-four of NTSC: 14.31818 MHz. PAL: 17.734475 MHz).
33	CDG/$\overline{\text{MPEG}}$	O	CD-G or MPEG play selector signal to external RGB video selector.
34	TEST0	I	Operation mode setting terminal.
35	GND	—	GND.
36	13.5M	O	13.5 MHz output.
37	GND	—	GND.
38～43	R OUT7～2	O	Y/R signal output (Output format can be selectable in Y/R).
44	GND	—	GND.
45, 46	R OUT1, 0	O	Y/R signal output (Output format can be selectable in Y/R).
47～54	G OUT7～0	O	U/G signal output (Output format can be selectable in U/G).
55	VCC	—	Power supply terminal.
56～63	B OUT7～0	O	V/B signal output (Output format can be selectable in V/B).
64	GND	—	GND.
65	27M	I	27 MHz input.
66	TEST1	I	Operation mode setting terminal.
67	SHSYNC	O	Comparison clock for PLL synchronizing CLK.
68	MHSYNC	O	Reference clock for PLL synchronizing CLK.
69	VCC	—	Power supply terminal.
70	OSC1	I	14.31818 MHz input port (crystal oscillation) when supporting NTSC.
71	OSC2	O	NTSC: 14.31818 MHz crystal oscillation output terminal.
72, 73	GND	—	GND.
74	OSC3	I	17.734475 MHz input port (crystal oscillation) when supporting PAL.
75	OSC4	O	17.734475 MHz crystal oscillation output terminal.
76	VCC	—	Power supply terminal.
77, 78	TEST2, 3	I	Operation mode setting terminal.
79	FMOD	I	FLD0 output HL inversion selection signal.
80	PMOD	I	PCP output HL inversion selection signal.

Pin No.	Pin Name	I/O	Description
81	GND	—	GND.
82~85	T15~T12	I	RAM data input terminals 15 - 12 during RAM check.
86	T11OP3	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
87	T10OP2	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
88	T9OP1	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
89	T8OP0	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
90	VCC	—	Power supply terminal.
91	$\overline{\mathrm{GHSYNC}}$	I	$\overline{\mathrm{HSYNC}}$ signal from CD-G decoder.
92	$\overline{\mathrm{GVSYNC}}$	I	$\overline{\mathrm{VSYNC}}$ signal from CD-G decoder.
93	$\overline{\mathrm{GCSYNC}}$	I	$\overline{\mathrm{CSYNC}}$ signal from CD-G decoder.
94	GND	—	GND.
95~98	T7~4	I	RAM data input terminals 7 - 4 during RAM check.
99	T3IP3	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
100	T2IP2	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
101	T1IP1	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
102	T0IP0	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
103	GND	—	GND.
104	4FSC	O	104 NTSC: 14.31818 MHz. PAL: 17.734475 MHz buffer output.
105	GND	—	GND.
106	RAMCE	I	Chip enable signal for checking internal RAM and ROM check. (Fixed to low normally).
107	RAMW	I	Read/write signal for checking internal RAM and ROM check. (Fixed to low normally).
108	XT2C	I	XT2C input (used for HYNC DL delay).
109	GND	—	GND.
110	$\overline{\mathrm{RST}}$	I	Input port of the reset signal.
111	GND	—	GND.
112	PAL/$\overline{\mathrm{NTSC}}$	I	PAL/NTSC selector port.
113	HSYNCIN	O	Inverted output of $\overline{\mathrm{HYNSC}}$ IN.
114	$\overline{\mathrm{HSYNCIN}}$	I	$\overline{\mathrm{SYNC}}$ signal from VST (only when supporting FMV engine).
115	$\overline{\mathrm{VSYNCIN}}$	I	$\overline{\mathrm{VSYNC}}$ from VSC. (only when supporting FMV engine).
116	GND	—	GND.
117~124	D7~0	I/O	CPU data bus signal.

Pin No.	Pin Name	I/O	Description
125	VCC	—	Power supply terminal.
126	CMOD	I	CLBK output HL inversion selection signal.
127	$\overline{\text{VOD}}$	I	Video output disable.
128	VCD/$\overline{\text{FMV}}$	I	VIDEO CD/DMV engine selection port.
129	$\overline{\text{CS}}$	I	Chip select signal.
130	$\overline{\text{RD}}$/$\overline{\text{LDS}}$	I	READ signal from CPU $\overline{\text{RD}}$ (when supporting H8). $\overline{\text{LD}}$ (when supporting 680009).
131	$\overline{\text{WR}}$/R/$\overline{\text{W}}$	I	$\overline{\text{WRITE}}$ signal from CPU $\overline{\text{WR}}$ (when supporting H8). R/W (when supporting 680009).
132~134	A2~0	I	Address signal from CPU.
135	H8/$\overline{\text{68}}$	I	CPU H8-325/68000 selection port.
136	GND	—	GND.
137	$\overline{\text{HSYNCO}}$	O	Horizontal sync output.
138	$\overline{\text{VSYNCO}}$	O	Vertical sync output.
139	$\overline{\text{CSYNCO}}$	O	Composite sync output. $\overline{\text{CSYNC}}$ signal from video encoder.
140	SMOD	I	13.5 MHz ↑ ↓ selection of SYNC signal output. Selection is possible at the final stage of $\overline{\text{HDO}}$, $\overline{\text{VDO}}$, $\overline{\text{HSYNCO}}$, $\overline{\text{VSYNCO}}$, $\overline{\text{CSYNCO}}$, SHYNC, PCP, CBLK, FLDO. (However, $\overline{\text{HSYNCO}}$, $\overline{\text{VSYNCO}}$, $\overline{\text{CSYNCO}}$ are supported during SYNC output of the CD-G decoder.)
141	VCC	—	Power supply terminal.
142~144	YIN7~5	I	Y signal from MPEG chip.

IC, MB89627

Pin No.	Pin Name	I/O	Description
1	CCLK	O	SSP, DSP Control Clock.
2	DATA	O	SSP, DSP Control Data.
3	SENS	I	SSP, DSP Status.
4	XLAT	O	SSP, DSP Command Latch.
5	XRST	O	SSP, DSP Reset.
6	TVMSW	O	OFF/NTSC/PAL/PAL60/PAL AUTO/AUTO/TEST. *NOTE
7	DMUTE	O	Digital Mute.
8	AMUTE	O	Analog Mute.
9	LDON	O	Servo PCB Power on.
10	VCDRST	O	Video CD Reset.
11	OPTON	O	Optical Digital Output ON.
12	VCC	—	A/D Converter VCC.
13	VCC	—	A/D Converter VREF.
14	VSS	—	A/D Converter VSS.
15	HOSTIRQ	I	Host CPU Interrupt Request.
16	SCOR	I	Subcode Sync 0. (Subcode IRQ)
17	ILSW	I	Inter Limit Switch.
18	VCDIRQ	I	Video CD Decoder Interrupt Request.
19	N. C.	I	Not used.
20	RST	I	CPU Reset.
21	MODE0	I	CPU MODE. (Pull-down)
22	MODE1	I	CPU MODE. (Pull-down)
23	CLKIN	O	8MHz System Clock.
24	CLKOUT	I	8MHz System Clock.
25	VSS	—	GND.
26	ALE	O	Address Latch Strobe.
27	RD	O	Data Read Strobe.
28	WR	O	Data Write Strobe.
29	CLK	O	Clock out.
30	READY	I	Video CD Decoder Ready.
31	OSDCS	O	OSDC Enable.
32	OSDCLK	O	OSDC Data Clock.
33	OSDSIN	O	OSDC Data.
34~41	A8~A15	O	Address Bus 8~15.
42~49	AD0~AD7	I/O	Address/Data Bus 0~7.
50	VSS	—	GND.
51	VCD/CDG	O	Video CD/CDG Switch.
52	HCLK	I	Host CPU Control Clock.
53	ST	O	Host CPU Control Send Data.
54	RT	I	Host CPU Control Receive Data.
55	TRACK	I	Travase Counter.

Pin No.	Pin Name	I/O	Description
56	ENCRST	O	Video Encoder Reset.
57	DVCC	—	DVCC.
58	PAL/PAL60	O	PAL/PAL60 Switch.
59	XNTSC	O	PAL/NTSC Switch.
60	SQCK	O	Subcode Q Read Clock.
61	SQSO	I	Subcode Q Serial Data.
62	BUSY	I/O	Host CPU I/F Busy Signal.
63	FOK	I	Focus Servo OK Detect.
64	GFS	I	Frame Sync Detect.

Note

- Analog input (TVMSW: 6 pin) of the microprocessor is divided into 7, then controlled.
- The output are the command setting (Set Video Format) to the two ports of PAL/PAL60 (58 pin), XNTSC (59 pin) and IC301 (CL484).

TVMSW (6 pins)		DISC encoding system	TV output mode	PAL/PAL60 (58 pins)	XNTSC (59 pins)	Set Video Format
Volt (V)	Mode					
5.00	OFF	—	Not used (NTSC output mode).			
4.58	NTSC	—	NTSC	H	L	NTSC
3.75	PAL	—	PAL	H	H	PAL
2.92	PAL60	—	PAL60	L	H	NTSC
2.08	PAL AUTO	NTSC	PAL60	L	H	NTSC
		PAL	PAL	H	H	PAL
1.25	AUTO	NTSC	NTSC	H	L	NTSC
		PAL	PAL	H	H	PAL
0.42	TEST	—	For servo circuit adjustment (NTSC output mode).			
0.00						

*1 As to identification of the disc encoding system, it is identified from the V_SIZE (1A1h/word) of the MPEG data.

*2 "For servo circuit adjustment" is the process during adjustment (when variable resistor is operated by service engineer) that the microprocessor enters the emergency process routine if the servo system goes extremely out of the servo range.

*3 In addition to the above, ENCRST (56 pin) is the reset signal for TV encoder, issues the active "L" pulse when each of the input port of CDGSW, NTB, CVSY, HSY, PIXCLK, GCLK, PAL60B and VCLK of IC401 (BU1417AK) has changed as follows:

① When the power is supplied to the circuit boards of the CD block,

② When starting to reach TOC.

③ The modes have changed as follows:

- TVMSW is switched.
- Switching of encoding system owing to exchange of video CD disc
- Exchange of video CD disc with the CD-DA or CD-G.

IC, CL484

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11~15	HD3~HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23~28	MD0~MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34~37	MD8~MD11	I/O	Memory data bus.
38	VSS	—	GND.
39~42	MD12~MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data'latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53~57	MA9~MA5	O	Memory address bus.
58	VSS	—	GND.
59~63	MA4~MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66~72	VD0~VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS	—	GND.
74~76	VD7~VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78~80	VD10~VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3	—	Power supply pin. Used in 3.3 V.
82~84	VD13~VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86~89	VD16~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91~94	VD20~VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	CDG-S0S1	I	Block start sync.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	CDG-VFSY	I	Frame start or composite sync.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	CDG-SDATA	I	Subcode data.
121	CDG-SCLK	I/O	Subcode data clock.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	FSC1	O	Output generated by dividing-by-4 the pin-126 input CLK.
125	VSS	—	GND.
126	FSC4	I	Frequency divider input.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, BU1417AK

Pin No.	Pin Name	I/O	Description
1	BOSD	I	OSD Blue Data input.
2	GD0	I	Green Data Bit 0. (LSB)
3~8	GD1~GD6	I	Green Data Bit 1~6.
9	GND	—	Digital ground.
10	GD7	I	Green Data Bit 7. (MSB)
11	BD0	I	Blue Data Bit 0. (LSB)
12~14	BD1~BD3	I	Blue Data Bit 1~3.
15	OSDSW	I	OSD input enable.
16	CDGSWB	I	Select Video-CD/CD-G.
17~19	BD4~BD6	I	Blue Data Bit 4~6.
20	BD7	I	Blue Data Bit 7. (MSB)
21	GND	—	Digital ground.
22	NTB	I	Select NTSC/PAL mode.
23, 24	IM0, IM1	I	Input mode set Bit 0, 1.
25, 26	TEST1, TEST2	I	Normally pulldown to GND.
27	CVSY	I	C-SYNC or V-SYNC input.
28	HSY	I	H-SYNC input.
29	PIXCLK	O	1/2 Freq. of internal CL.
30	BLKB	I	Data blanking ENABLE.
31	VDD	—	Digital VDD.
32	INT	I	INTERLACE/NON-INTERLACE.
33	SLABEB	I	Set mode MASTER/SLABE.
34	ADDH	I	ADD One_line at Non-inter.
35	VREF	I	Reference voltage. (1.29V)
36	CGND	—	Chroma output ground.
37	COUT	O	Chroma output.
38	VGND	—	Composite output ground.
39	VOUT	O	Composite output.
40	AVSS	—	Analog (DAC, VREF) ground.
41	NC	—	Not used.
42	IR	I	Reference resistor. (1.2K)
43	AVDD	—	Analog (DAC, REF) VDD.
44	YGND	—	Luminance output ground.
45	YOUT	O	Luminance output.
46	G4FSC	I	Pulldown to GND.
47	GCLK	I	Video clock input for CD-G.
48	YCOFF	I	DAC (YOUT, COUT) off.
49	YFILON	I	Pulldown to GND.
50	PAL60B	I	PAL60 ON at NTB=HIGH.
51	VCLK	I	Video clock input for VCD.
52	RSTB	I	Logic part initial reset.

Pin No.	Pin Name	I/O	Description
53	CLKSW	I	Divide input CLK $\overline{\text{ENABLE}}$.
54	RD0	I	Red data Bit 0. (LSB)
55, 56	RD1, RD2	I	Red data Bit 1, 2.
57	ROSD	I	OSD Red data input.
58~60	RD3~RD5	I	Red data Bit 3~5.
61	VDD	—	Digital VDD.
62	RD6, RD7	I	Red data Bit 6, 7.
63	GOSD	I	OSD green data input.

IC, BU2173AF

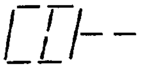
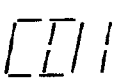
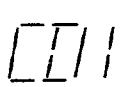
Pin No.	Pin Name	I/O	Description
1	VDD	—	Digital VDD.
2	TSTO	O	Open during normal mode. (Used in test mode.)
3	XTALI	I	Reference oscillator input.
4	XTALO	O	Reference oscillator output.
5	CTRLA	I	CD-G/VCD clock selector terminal.
6	CTRLB	I	Fixed to "H" during normal mode.
7	CTRLC	I	CD-G PAL/NTSC clock selector terminal.
8	TSTI	I	Connected to Vss during normal mode. (Used in test mode.)
9	VSS	—	Digital GND.
10	AVSS	—	Analog GND.
11	FOUT3	O	Not used. Open during normal mode.
12	VSSIO	—	I/O GND.
13	FOUT2	O	Clock output (2).
14	TEST	—	Test mode setting. Connected to Vss during normal mode.
15	FOUT1	O	Clock output (1).
16	VDDIO	—	I/O VDD.
17	FOUT4	O	Clock output (4).
18	AVDD	—	Analog VDD.

TEST MODE

1. How to Activate CD Test Mode
Insert the AC plug while pressing the function CD button.
All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
Either one of the following operations will cancel the CD test mode.
- Press the function button. (except CD function button)
- Press the power switch button.
- Disconnect the AC plug

3. CD Test Mode Functions
When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

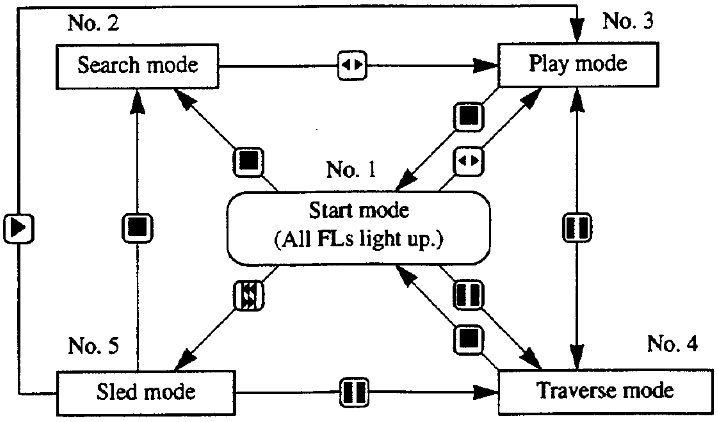
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • Laser diode turns always ON. (CD block power is ON.)	• FL display check (All displays light.) • APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key		• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key		• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key		• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

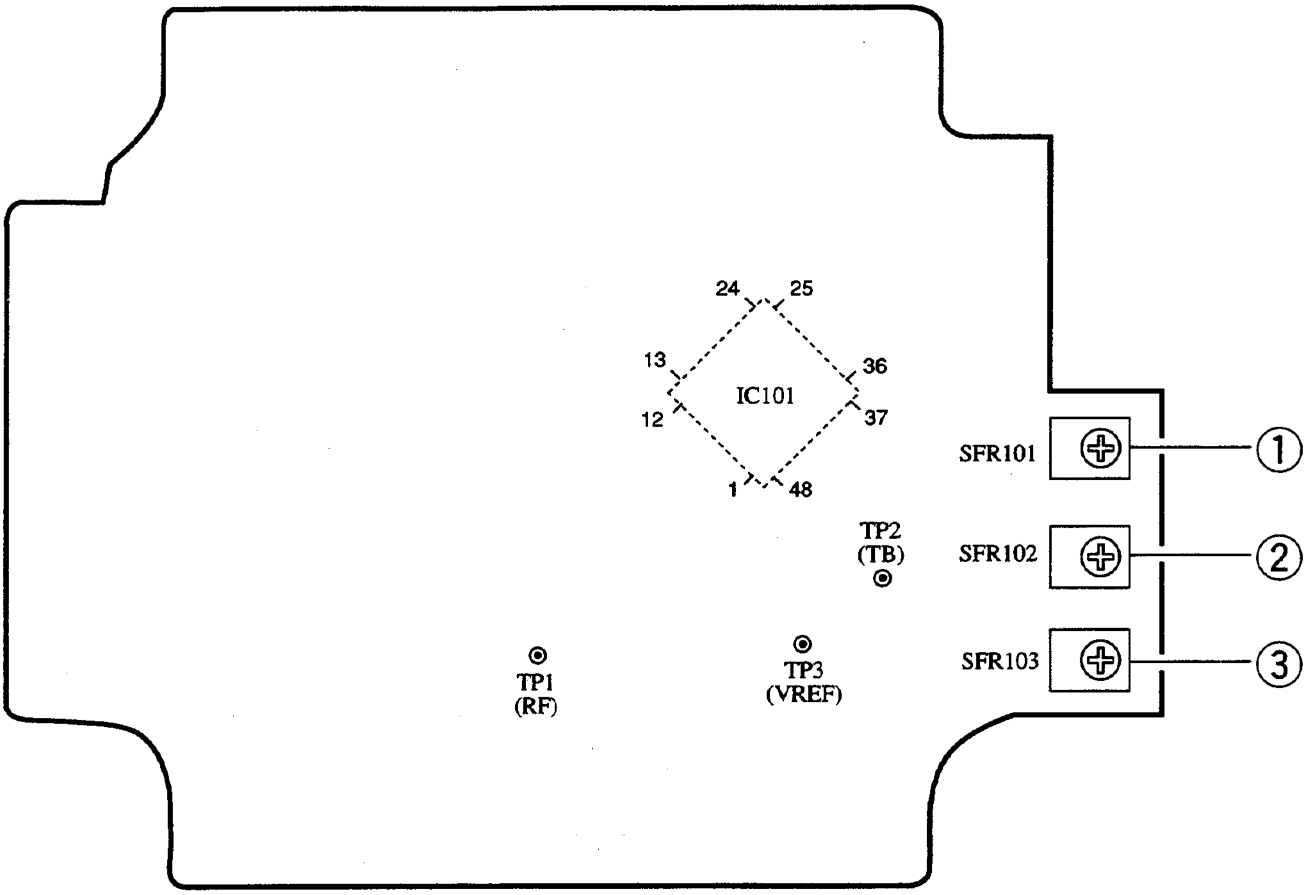
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

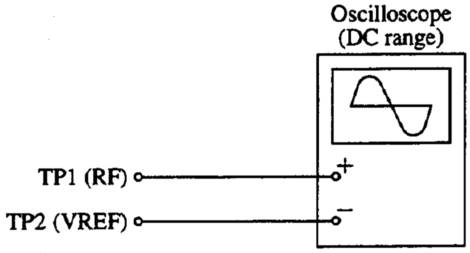
B CD MECHA C.B


24
25
13
36
IC101
12
37
1
48
TP2
(TB)
TP1
(RF)
TP3
(VREF)
SFR101
SFR102
SFR103
①
②
③

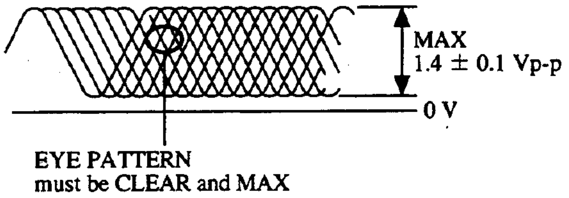
Note: Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

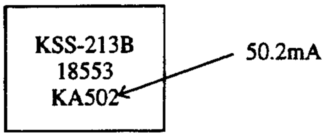


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR101 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



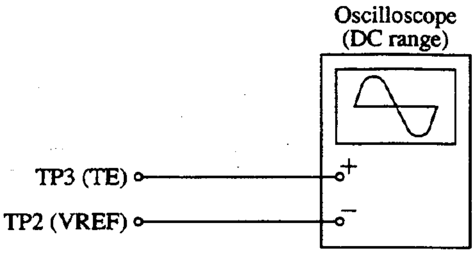
VOLT/DIV : 50mV
TIME/DIV : 0.5µS

Note: The current of the laser signal can be checked with the voltages on both sides of R127 (10Ω). The difference for the specified value shown on the lavel must be within ± 6.0mA.

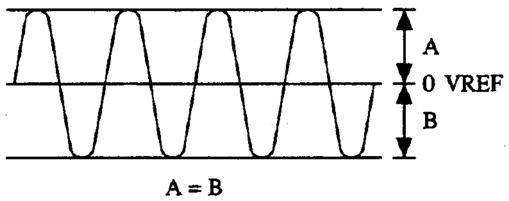


$$\text{Laser current Iop} = \frac{\text{Voltage across R127}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR103 to decrease the tracking gain.
5) Adjust SFR102 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the terminals.



VOLT/DIV : 20mV
TIME/DIV : 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is off, the symptoms below appear.

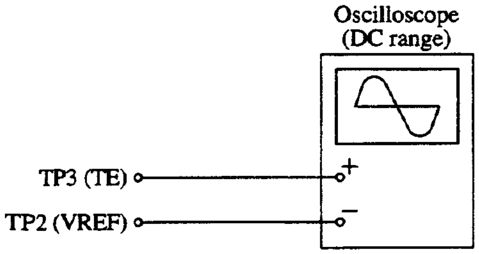
Gain / Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP→ ▶ PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP → ▶ PLAY or automatic selection (⏮, ⏭ buttons pressed.)	—	low
● Disc stops to rotate shortly after STOP→ ▶ PLAY.	low or high	—
● Sound is interrupted during PLAY. Or time counter display stops.	—	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

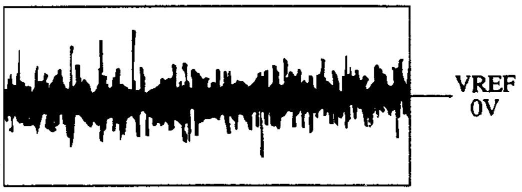
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF) of the CD MECHA C.B.
4) Adjust SFR103 so that the waveform appears as shown in the figure below. (tracking gain adjustment)

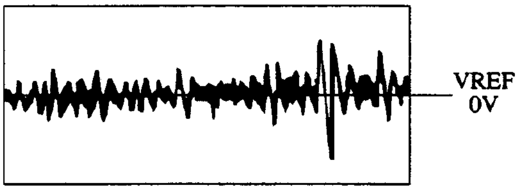


VOLT/DIV: 50 mV
TIME/DIV: 1mS

- Incorrect example

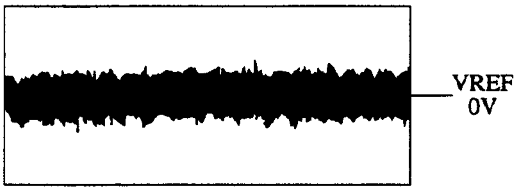
Low tracking gain

The fundamental wave appears as compared with the waveform adjusted.



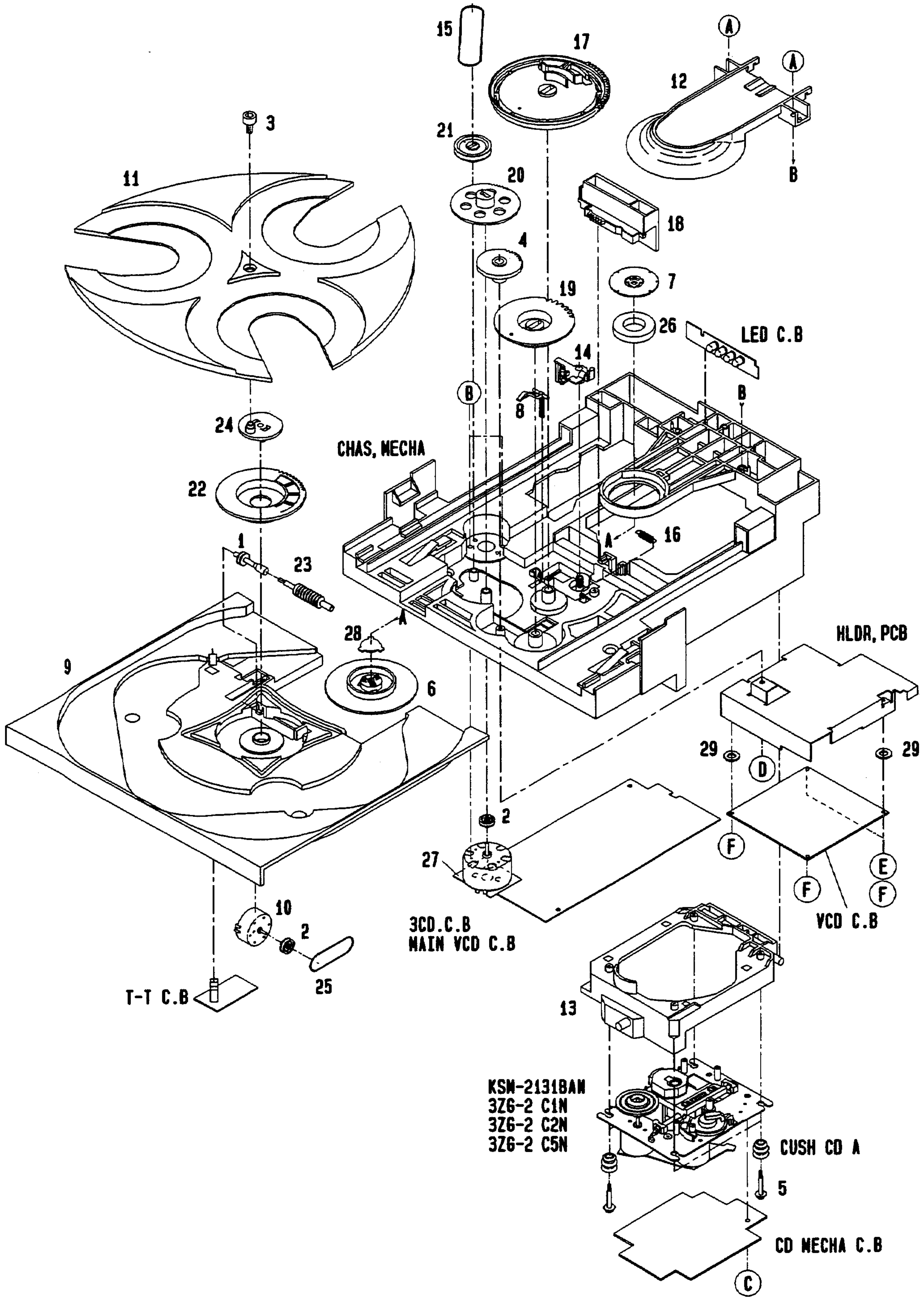
VOLT/DIV: 50 mV
TIME/DIV: 1mS

High tracking gain
The frequency of the fundamental wave is higher than that in low gain.



VOLT/DIV: 50 mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1 ／ 1

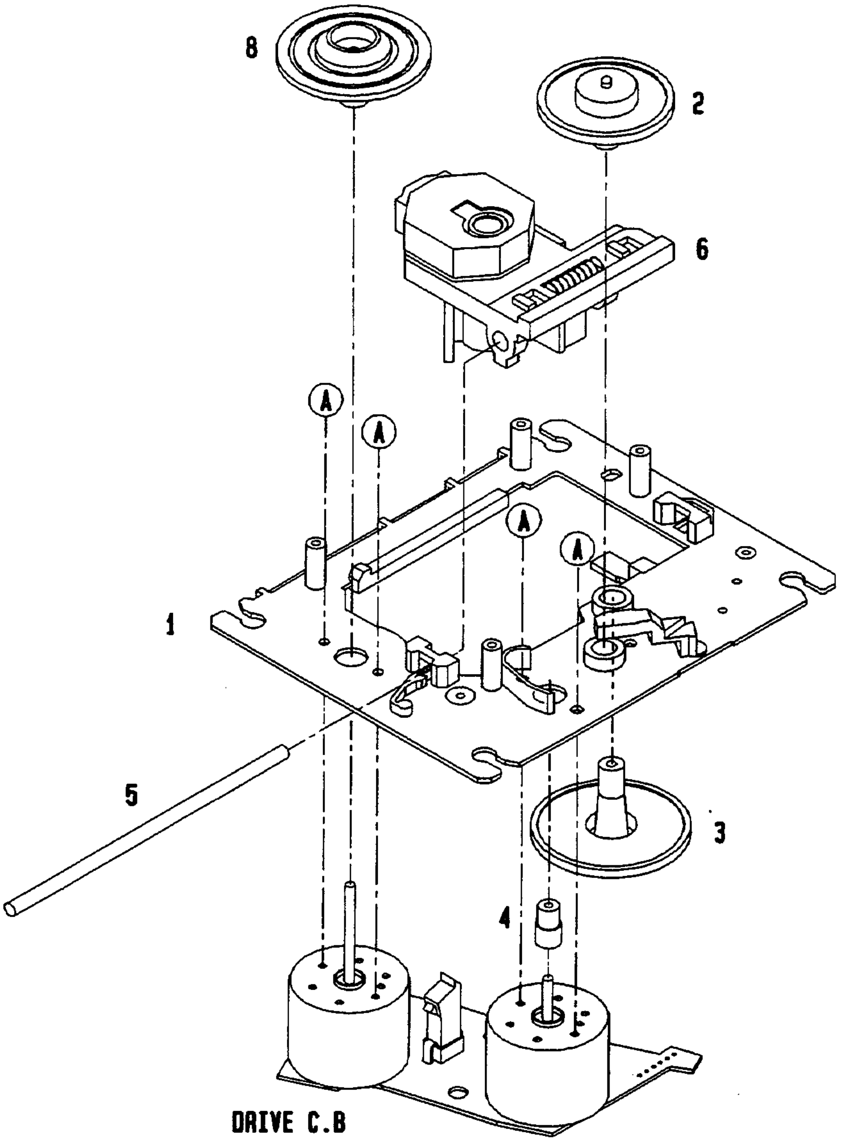

15
17
A
A
12
B
3
21
11
20
18
4
7
19
26
LED C.B
14
B
8
B
24
CHAS, MECHA
22
A
16
1
23
28
A
HLDR, PCB
9
6
29
D
29
2
F
27
E
F
F
10
3CD.C.B
MAIN VCD C.B
VCD C.B
2
25
T-T C.B
13
KSM-2131BAM
3Z6-2 C1N
3Z6-2 C2N
3Z6-2 C5N
CUSH CD A
5
CD MECHA C.B
C

MECHANICAL PARTS LIST 1／1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	84-ZG1-239-11K		PULLY,WORM N
2	81-ZG1-212-01K		PULLY,LOAD MO
3	81-ZG1-239-019		S-SCREW,TT
4	81-ZG1-291-019		GEAR,TRAY RELAY NO3
5	81-ZG1-271-019		S-SCREW,MECH REAR
6	81-ZG1-277-219		HLDR,MAGNET N
7	81-ZG1-255-119		PLATE,MAGNET MK2
8	83-ZG3-213-019		LVR,SW
9	84-ZG1-003-219		TRAY,NO2-B
10	87-045-364-019		MOTOR,(BCH3B14)
11	84-ZG1-005-119		TURNTABLE,NO1
12	84-ZG1-010-019		IND,CD N<V3L,V4L>
12	84-ZG1-011-019		REFLECTOR,CD<A,B,Z,V5>
13	84-ZG1-212-119		HLDR,MECHA NO2
14	84-ZG1-208-019		LEVER,CAM
15	84-ZG1-209-010		BELT,SQ1.8-117.7
16	84-ZG1-211-019		SPR-E CAM S
17	84-ZG1-215-219		GEAR,MAIN CAM BLU
18	84-ZG1-216-219		SLIDE,MECHA CAM YEL
19	84-ZG1-205-119		GEAR,TRAY
20	84-ZG1-206-119		GEAR,RELAY
21	84-ZG1-219-019		PULLY,RELAY BGE
22	84-ZG1-221-019		GEAR,MAIN TT
23	84-ZG1-238-01K		GEAR,WORM N
24	84-ZG1-224-019		LEVER,TT
25	84-ZG1-225-010		BELT,SQ1.0-63.3
26	87-036-326-010		MAGNET,CLAMPER 93<A,B,Z,WR,V5>
26	83-ZG3-602-010		RING,MAG<V3L,V4L>
27	80-CD3-214-019		CUSH CD A
28	84-ZG1-248-019		SPR-C,WORM
29	82-DW1-220-019		SPACER,DIA 3.6-8-0.24<V3L>
A	87-067-703-019		BVT2+3-10 (W/0 SLOT)<EXCEPT WR>
B	87-251-070-419		U+2.6-3<Z>
C	87-342-036-219		UT2+2-8<V3L,V4L,V5>
D	87-067-579-019		BVT 2+3-8 W/O SLOT<V3L,V4L>
E	81-557-598-010		UTT+2-5 C-TITE<V4L>
F	87-067-767-019		BVTT+2.6-6<V3L>
G	87-067-058-019		FW,3.2-8-0.5<V4L>

CD MECHANISM EXPLODED VIEW 1／1 (3ZG-2 C5N <WR>)

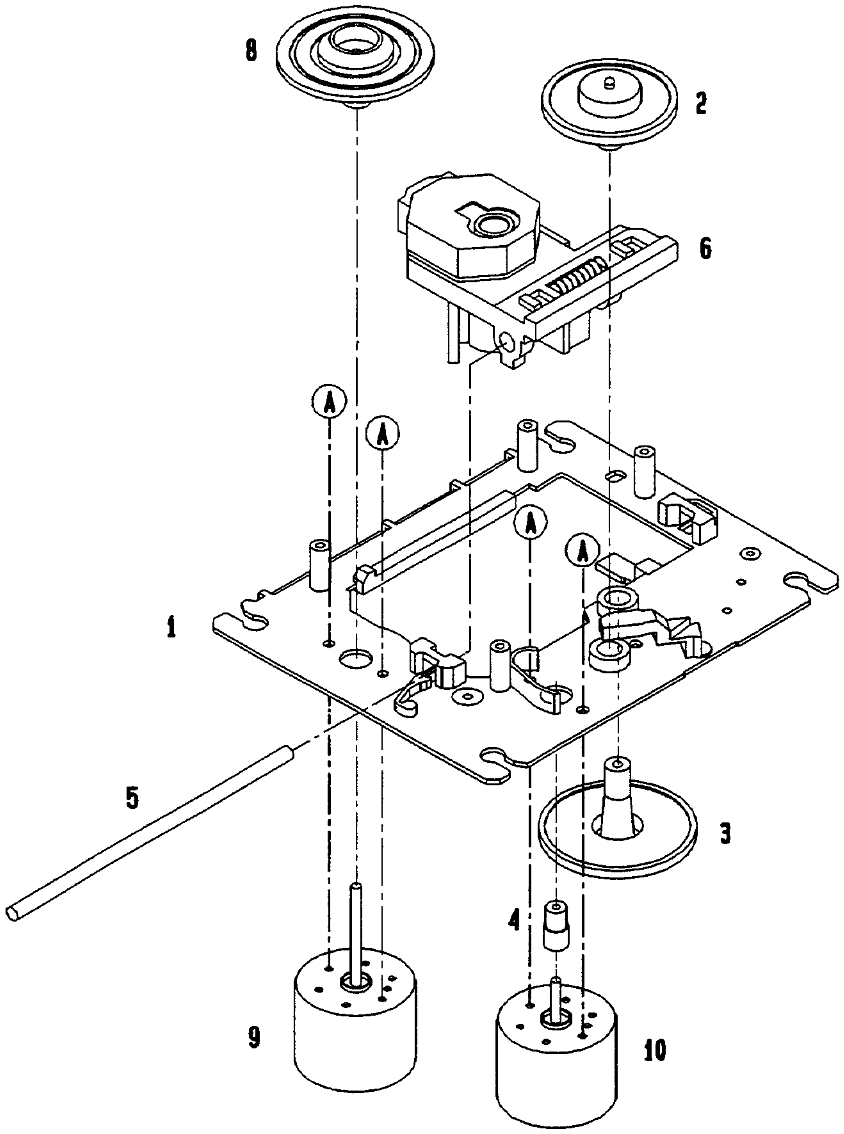


CD MECHANISM PARTS LIST 1／1 (3ZG-2 C5N <WR>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S
2	83-ZG2-204-419		GEAR,A
3	83-ZG2-205-219		GEAR,B
4	83-ZG2-220-01K		GEAR MOTOR 2
5	83-ZG2-207-119		SHAFT,SLIDE
6	87-070-445-010		PICK-UP,KSS-213B
8	83-ZG2-227-01K		TURN TABLE,C1
A	87-261-032-219		SCREW V+2-3

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C1N <V3L/V4L/V5>)



CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C1N <V3L/V4L/V5>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S
2	83-ZG2-204-419		GEAR,A
3	83-ZG2-205-219		GEAR,B
4	83-ZG2-220-01K		GEAR MOTOR 2
5	83-ZG2-207-119		SHAFT,SLIDE
6	87-070-445-010		PICK-UP,KSS-213B
8	83-ZG2-233-019		TURN TABLE,A5
9	87-045-358-019		MOT,RF-310T A 43
10	87-045-356-019		MOT,RF-310T A 30
A	87-261-032-219		SCREW V+2-3

4ZG-1A

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-070-294-019		IC,CXD2508AQ
	87-017-745-019		IC,CXA1782BQ
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-017-802-010		IC,LC7872E<G>
	87-017-803-010		IC,LC32464P-80<G>
TRANSISTOR			
	87-026-239-089		C-TR,DTC114TK
	89-110-373-089		C-TR,2SA1037 S
	89-420-052-089		TR 2SD2005Q (T105)
	89-421-722-389		TR,2SD2172 V/W
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-608-089		C-TR,DTC 123 JK
	89-406-555-089		TR,2SD655E<G>
	87-A30-039-040		C-TR,2SD1383K<D>
DIODE			
	87-020-465-089		DIODE,1SS133
	87-020-330-089		C-DIODE,DAP202K
3CD C.B			
C101	87-010-194-089		C-CAP,S 0.047-25 F
C102	87-010-180-089		C-CAP,S 1500P-50 B
C103	87-018-134-089		CAP,TC-U 0.01-16 Y
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-015-698-049		CAP,E 4.7-50 7L
C106	87-010-060-049		CAP,E 100-16 7L
C107	87-010-197-089		C-CAP,S 0.01-25 B
C108	87-016-461-089		C-CAP,S 0.47-16 F
C109	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-318-089		C-CAP,S 47P-50 CH
C116	87-010-318-089		C-CAP,S 47P-50 CH
C117	87-010-197-089		C-CAP,S 0.01-25 B
C118	87-010-260-089		CAP,E 47-25 SME
C119	87-018-134-089		CAP,TC-U 0.01-16 Y<EXCEPT G>
C120	87-018-209-080		CAP,TC-U 0.1-50 F
C121	87-018-134-089		CAP,TC-U 0.01-16 Y
C151	87-010-182-089		C-CAP,S 2200P-50 B
C152	87-010-196-089		C-CAP,S 0.1-25 F
C153	87-010-196-089		C-CAP,S 0.1-25 F
C154	87-010-196-089		C-CAP,S 0.1-25 F
C155	87-010-404-089		CAP,E 4.7-50 SME
C156	87-010-193-089		C-CAP,S 0.033-25 F
C157	87-010-197-089		C-CAP,S 0.01-25 B
C158	87-010-401-089		CAP,E 1-50 SME
C159	87-010-382-089		CAP,E 22-25 SME
C160	87-010-213-089		C-CAP,S 0.015-25 B
C161	87-018-134-089		CAP,TC-U 0.01-16 Y
C162	87-010-263-089		CAP,E 100-10 SME 5X11
C163	87-010-197-089		C-CAP,S 0.01-25 B
C164	87-010-193-089		C-CAP,S 0.033-25 F
C165	87-010-197-089		C-CAP,S 0.01-25 B
C166	87-010-193-089		C-CAP,S 0.033-25 F
C167	87-010-197-089		C-CAP,S 0.01-25 B
C169	87-010-150-089		C-CAP,S 6P-50 CH
C170	87-010-263-089		CAP,E 100-10 SME 5X11
C171	87-010-178-089		C-CAP,S 1000P-50 B
C172	87-010-198-089		C-CAP,S 0.022-25 B
C173	87-010-196-089		C-CAP,S 0.1-25 F
C174	87-010-197-089		C-CAP,S 0.01-25 B
C175	87-010-263-089		CAP,E 100-10 SME 5X11
C176	87-010-248-089		CAP,E 220-10 SME
C177	87-010-197-089		C-CAP,S 0.01-25 B
C178	87-010-260-089		CAP,E 47-25 SME
C179	87-010-196-089		C-CAP,S 0.1-25 F
C180	87-010-196-089		C-CAP,S 0.1-25 F
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		G-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-405-049		CAP,E 10-50 SME
C212	87-010-405-049		CAP,E 10-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-010-112-089		CAP,E 100-16 11L
C232	87-010-060-049		CAP,E 100-16 7L
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-049		CAP,E 470-10 SME
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-089		CAP,E 100-10 SME 5X11
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-221-049		CAP,E 470-10 SME
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C511	87-010-185-089		C-CAP,S 3900P-50 B
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-137-080		CAP,E,22-16 BP
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C704	87-010-178-089		C-CAP,S 1000P-50 B
C705	87-010-178-089		C-CAP,S 1000P-50 B
C712	87-010-982-049		CAP,E 33-25 GAS
C801	87-010-197-089		C-CAP,S 0.01-25 B<G>
C802	87-010-260-089		CAP,E 47-25 SME<G>
C803	87-010-194-089		C-CAP,S 0.047-25 F<G>
C804	87-010-260-089		CAP,E 47-25 SME<G>
C805	87-018-134-089		CAP,TC-U 0.01-16 Y<G>
C806	87-010-260-089		CAP,E 47-25 SME<G>
C807	87-010-405-089		CAP,E 10-50 SME<G>
C808	87-010-197-089		C-CAP,S 0.01-25 B<G>
C809	87-010-405-049		CAP,E 10-50 SME<G>
C810	87-010-313-089		C-CAP,S 18P-50 CH<G>
C811	87-010-314-089		C-CAP,S 22P-50 CH<G>
C812	87-010-313-089		C-CAP,S 18P-50 CH<G>
C813	87-010-315-089		C-CAP,S 27P-50 CH<G>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C814	87-010-197-089		C-CAP,S 0.01-25 B<G>
C815	87-010-260-049		CAP,E 47-25 SME<G>
C816	87-010-404-089		CAP,E 4.7-50 SME<G>
C817	87-010-221-089		CAP,E 470-10<G>
C818	87-010-196-089		C-CAP,S 0.1-25 F<G>
C819	87-010-321-089		C-CAP,S 82P-50 CH<G>
C820	87-010-178-089		C-CAP,S 1000P-50 B<G>
C821	87-010-196-089		C-CAP,S 0.1-25 F<G>
C822	87-010-197-089		C-CAP,S 0.01-25 B<G>
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
CON2	84-ZG1-616-019		CONN ASSY,6P H
EMI801	87-008-474-089		F-BEAD,EMI BL02RN1<G>
EMI802	87-008-474-089		F-BEAD,EMI BL02RN1<G>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
J801	87-009-502-010		JACK,PIN 1PY EARTH<G>
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-305-019		MOTOR, RF-500TB
R177	87-022-365-089		C-RES,S 100K-1/10W F
R178	87-022-363-089		C-RES,S 68K-1/10W F
R179	87-022-363-089		C-RES,S 68K-1/10W F
R180	87-022-363-089		C-RES,S 68K-1/10W F
R181	87-022-363-089		C-RES,S 68K-1/10W F
R182	87-022-365-089		C-RES,S 100K-1/10W F
R401	87-022-186-089		C-RES,82-1/4W J
R403	87-022-186-089		C-RES,82-1/4W J
SFR151	87-024-175-089		SFR,47K DIA6 V
SFR152	87-024-176-089		SFR,100K DIA6 V
SFR153	87-024-176-089		SFR,100K DIA6 V

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
X801	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>
X802	80-JUC-601-089		VIB,XTAL 14.31MHZ<G>

LED C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1

T-T C.B

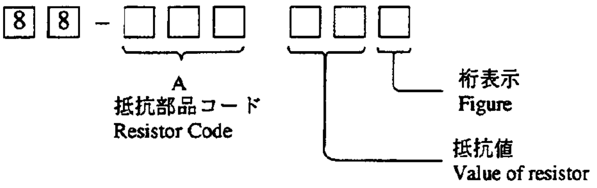
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

MOTOR C.B

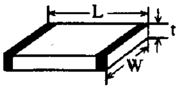
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード :A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

■ IC DESCRIPTION

CXA1782BQ .... See page 64
LC7872E .... See page 62

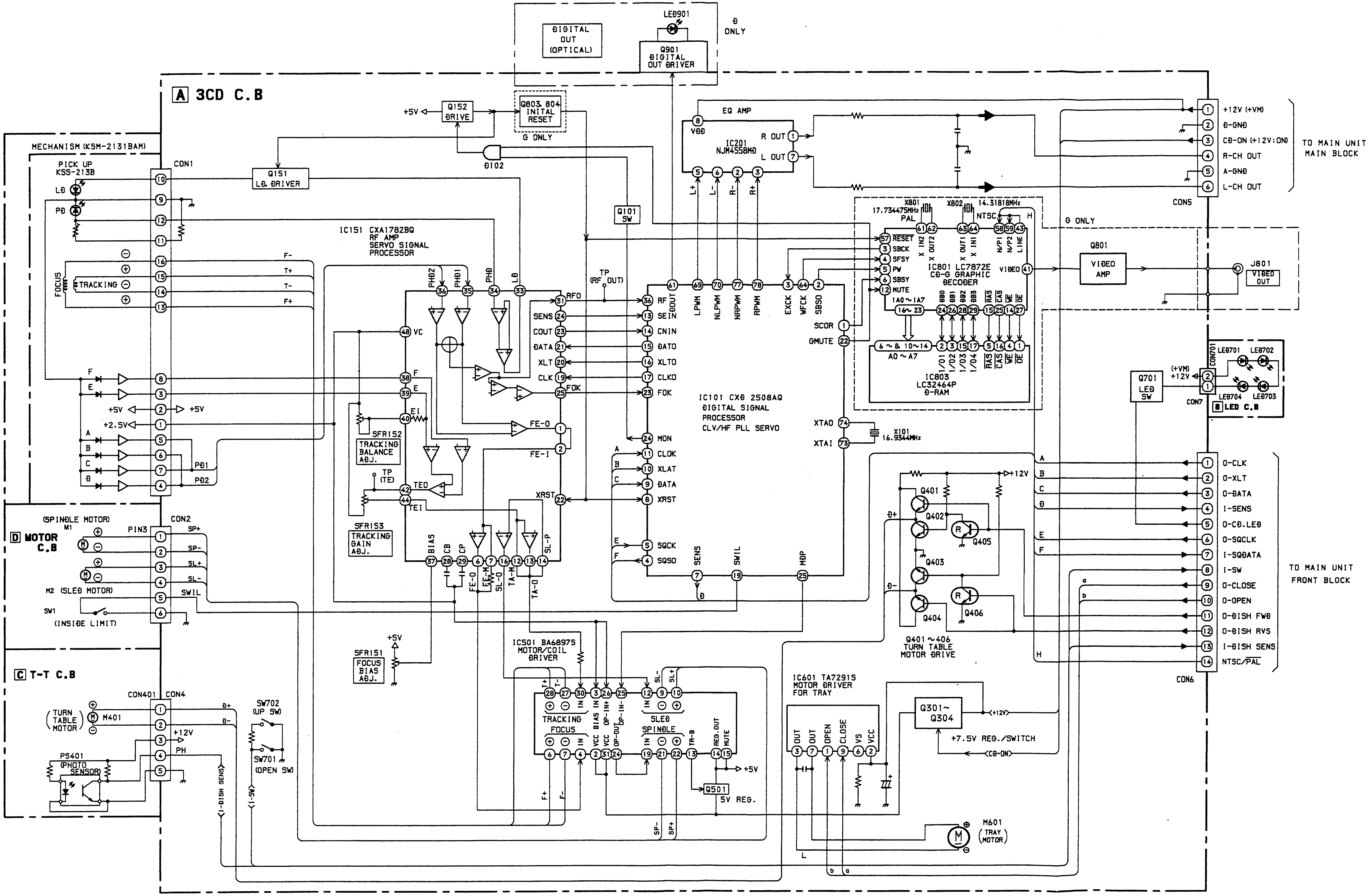
■ MECHANICAL EXPLODED VIEW 1／1

See page 95

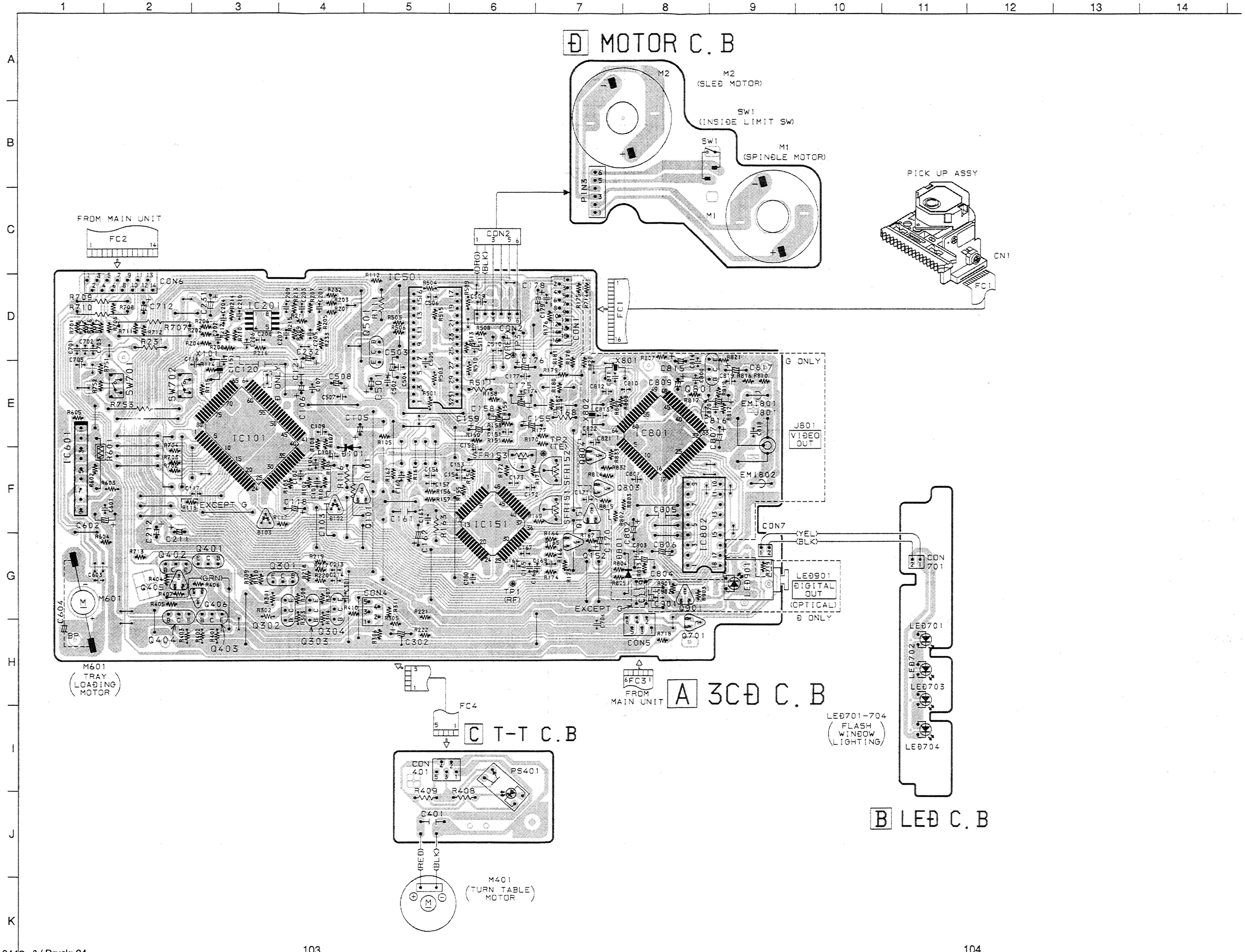
■ MECHANICAL PARTS LIST 1／1

See page 96

BLOCK DIAGRAM

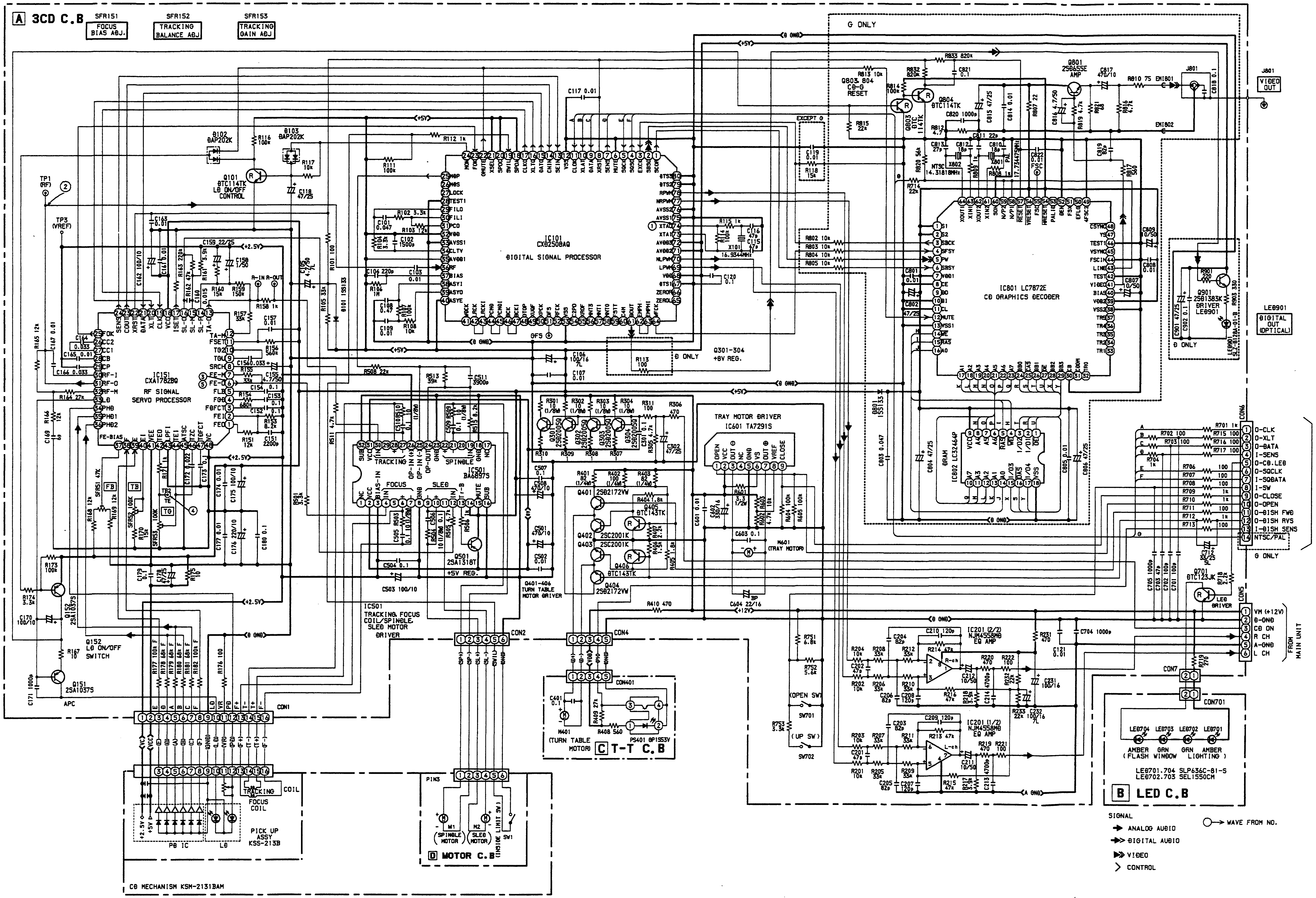

LED901
D ONLY
DIGITAL OUT (OPTICAL)
Q901 DIGITAL OUT DRIVER
A 3CD C.B
+5V
Q152 DRIVE
Q803, 804 INITAL RESET
G ONLY
D102
Q151 LD. DRIVER
MECHANISM (KSM-2131BAM)
PICK UP KSS-213B
LD
PD
CON1
FOCUS
TRACKING
IC151 CXA1782BQ RF AMP SERVO SIGNAL PROCESSOR
F-
T+
T-
F+
PHD2
PHD1
PHD
LD
RFO
SENS
COUT
DATA
XLT
CLK
FOK
VC
F
E
EI
FE-O
FE-I
SFR152 TRACKING BALANCE ADJ.
TP (TE)
TEO
TEI
SFR153 TRACKING GAIN ADJ.
XRST
BIAS
CB
CP
SL-P
SL-O
TA-M
TA-O
+5V
+2.5V
PD1
PD2
Q101 SW
TP (RF OUT)
EQ AMP
VDD
IC201 NJM4558MD
R OUT
L OUT
L+
L-
R-
R+
IC101 CXD 2508AQ DIGITAL SIGNAL PROCESSOR CLV/HF PLL SERVO
RF
SEIN
CNIN
DATO
XLTO
CLKO
FOK
DOUT
LPWM
NLPWM
NRPWM
RPWM
EXCK
WFCK
SBSO
SCOR
GMUTE
XTAO
XTAI
X101 16.9344MHz
MON
CLOK
XLAT
DATA
XRST
SQCK
SQSO
SENS
SWIL
MDP
X801 17.734475MHz PAL
X802 14.31818MHz NTSC
IC801 LC7872E CD-G GRAPHIC DECODER
RESET
SBCK
SFSY
PW
SBSY
MUTE
X IN2
X OUT2
X OUT1
X IN1
N/P1
N/P2
LINE
VIDEO
IA0~IA7
DB0
DB1
DB2
DB3
RAS
CAS
WE
OE
IC803 LC32464P D-RAM
A0~A7
I/O1
I/O2
I/O3
I/O4
G ONLY
Q801 VIDEO AMP
J801 VIDEO OUT
CON5
+12V (+VM)
D-GND
CD-ON (+12V:ON)
R-CH OUT
A-GND
L-CH OUT
TO MAIN UNIT MAIN BLOCK
CON701
LED701
LED702
LED704
LED703
Q701 LED SW
(+VM) +12V
CON7
B LED C.B
CON6
O-CLK
O-XLT
O-DATA
I-SENS
O-CD.LED
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
NTSC/PAL
TO MAIN UNIT FRONT BLOCK
+12V
Q401
Q402
Q403
Q404
Q405
Q406
D+
D-
Q401~406 TURN TABLE MOTOR DRIVE
D MOTOR C.B
(SPINDLE MOTOR) M1
PIN3
CON2
SP+
SP-
SL+
SL-
SWIL
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT)
SFR151 FOCUS BIAS ADJ.
IC501 BA6897S MOTOR/COIL DRIVER
TRACKING
FOCUS
SLED
SPINDLE
VCC
BIAS IN
OP-IN+
OP-IN-
OP-OUT
TR-B
REG.OUT
MUTE
Q501 5V REG.
IC601 TA7291S MOTOR DRIVER FOR TRAY
OUT
OPEN
CLOSE
VS
VCC
Q301~Q304
+7.5V REG./SWITCH
(CD-ON)
(+12V)
M601 (TRAY MOTOR)
C T-T C.B
CON401
CON4
(TURN TABLE MOTOR) M401
PS401 (PHOTO SENSOR)
PH
SW702 (UP SW)
SW701 (OPEN SW)
(I-DISH SENS)
(I-SW)

WIRING



1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
D MOTOR C.B
M2
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
SW1
M1 (SPINDLE MOTOR)
M1
PIN3
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON2
(ORG)
(BLK)
IC501
IC201
IC101
IC151
IC801
IC802
IC601
CON1
X801
X802
TP1 (RF)
TP2 (TE)
G ONLY
J801 VIDEO OUT
EM1801
EM1802
CON7
(YEL)
(BLK)
CON 701
LED901 DIGITAL OUT (OPTICAL)
D ONLY
EXCEPT G
CON4
CON5
FC3 FROM MAIN UNIT
A 3CD C.B
M601
M601 TRAY LOADING MOTOR
SW701
SW702
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
LED701
LED702
LED703
LED704
LED701-704 (FLASH WINDOW LIGHTING)
B LED C.B

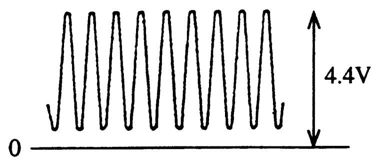
SCHEMATIC DIAGRAM


A 3CD C.B
SFR151 FOCUS BIAS ADJ.
SFR152 TRACKING BALANCE ADJ
SFR153 TRACKING GAIN ADJ
G ONLY
IC101 CXD2500AQ DIGITAL SIGNAL PROCESSOR
IC151 CXA1782BQ RF SIGNAL SERVO PROCESSOR
IC801 LC7872E CD GRAPHICS DECODER
IC802 LC3264AP DRAM
IC501 BA6897S
IC501 TRACKING, FOCUS COIL/SPINDLE, SLED MOTOR DRIVER
TRAY MOTOR DRIVER IC601 TA7291S
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD EQ AMP
Q101 DTC114TK LD ON/OFF CONTROL
Q152 LD ON/OFF SWITCH
Q151 2SA1037S
Q501 2SA1318T +5V REG.
Q301-304 +8V REG.
Q401-406 TURN TABLE MOTOR DRIVER
Q801 2SB655E AMP
Q803, 804 CD-G RESET
Q901 2SB1383K DRIVER LED901
Q701 DTC123JK LED DRIVER
J801 VIDEO OUT
LED901 DIGITAL OUT (OPTICAL)
TP1 (RF)
TP3 (VREF)
M601 (TRAY MOTOR)
M401 (TURN TABLE MOTOR)
PS401 DP1S53V
C T-T C.B
PICK UP ASSY KSS-213B
PD IC
LD
TRACKING COIL
FOCUS COIL
CD MECHANISM KSM-2131BAM
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D MOTOR C.B
(OPEN SW) SW701
(UP SW) SW702
CON1
CON2
CON4
CON401
CON5
CON6
CON7
CON701
O-CLK
O-XLT
O-DATA
I-SENS
O-CD.LED
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
NTSC/PAL
FROM MAIN UNIT.
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
FROM MAIN UNIT
LED704 LED703 LED702 LED701
AMBER (FLASH WINDOW)
GRN
GRN
AMBER (LIGHTING)
LED701.704 SLP636C-81-S
LED702.703 SEL1550CM
B LED C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
WAVE FROM NO.

WAVE FORM

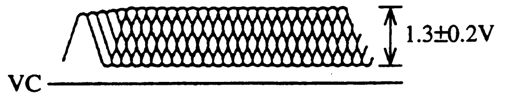
① SYSTEM CLOCK
IC101 Pin ㉔ (XTAO)
f=16.9344MHz

VOLT/DIV: 2V
TIME/DIV: 0.1μS



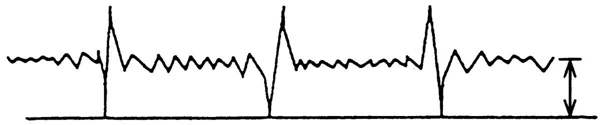
② RF
TP1 (RF)

VOLT/DIV: 500mV
TIME/DIV: 0.5μS



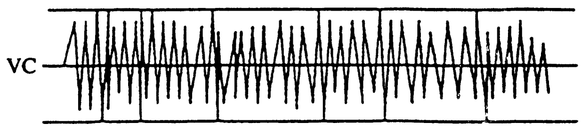
③ Focus
IC151 Pin ⑥ (FE-O)

VOLT/DIV: 200mV
TIME/DIV: 2mS

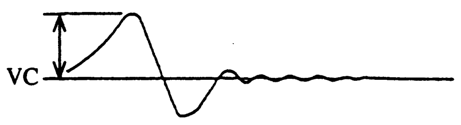


④ Tracking
TP2 (TE)

TIME/DIV: 1mS

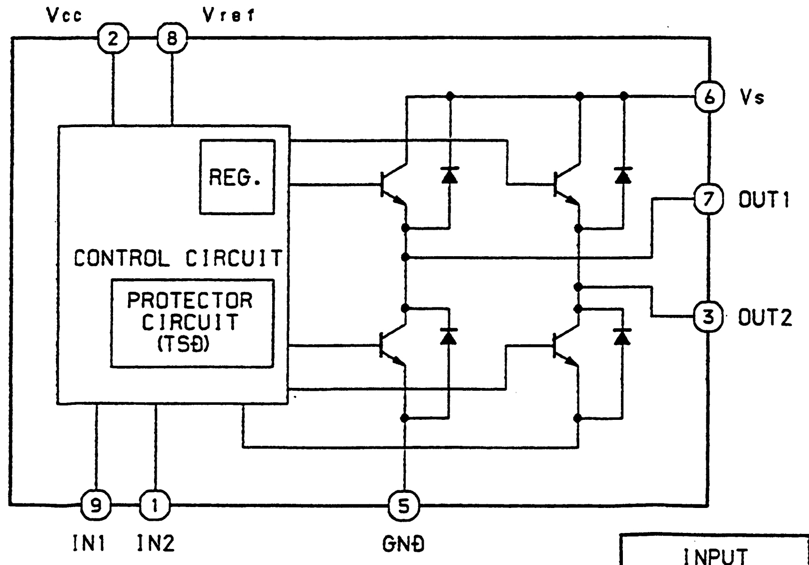


⑤ Focus Search
IC151 Pin ⑥ (FE-O)



IC BLOCK DIAGRAM

IC, TA7291



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

IC DESCRIPTION

IC, CXD2508AQ

Pin No.	Pin name	I/O	Description
1	SCOR	O	1H when the subcode sync S0 or S1 is detected.
2	SBSO	O	SUBP~W serial output.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	SUBQ 80-bit serial output.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	H to mute. L to cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset. L to reset.
9	DATA	I	Serial data input from CPU .
10	XLAT	I	Latch input from CPU. Latching serial data at fall down.
11	CLOK	I	Clock input from CPU to transfer serial data.
12	VSS	—	GND.
13	SEIN	I	SENS input from SSP.
14	CNIN	I	Numbers of track jump are counted and input.
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latched output to SSP. Latched at fall down edge.
17	CLKO	O	Clock input from SSP to transfer serial data.
18, 20	SPOA, C	I	Microprocessor expansion interface.
19	XTSL	I	X'tal selection input terminal. "L" at 16.9344MHz X'tal. "H" at 33.86888MHz.
22	XLON	O	Microprocessor expansion interface.
23	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
24	MON	O	Spindle motor ON/OFF control output.
25	MDP	O	Spindle motor servo control output.
26	MDS	O	Spindle motor servo control output.
27	LOCK	O	GFS is sampled by 460Hz. H output when GFS is H. L output when GFS is L for 8 consecutive times.
28	TEST1	I	TEST. (Connected to GND)
29	FILO	O	Filter output to master PLL. (slave=digital PLL)
30	FILI	I	Filter input to master PLL.
31	PCO	O	Charge-pump output to master PLL.
32	VDD	—	Power supply input. (+5V)
33	AVSS1	—	GND.
34	CLTV	I	VCO control voltage input to master PLL.
35	AVDD1	—	Power supply input. (+5V)
36	RF	I	EFM signal input.
37	BIAS	I	Constant current input to asymmetry correction circuit.
38	ASYI	I	Comparate voltage input to asymmetry correction circuit.
39	ASYO	O	EFM full swing output. (L=VSS, H=VDD)
40	ASYE	I	L: asymmetry correction OFF. H: asymmetry correction ON
41	WDCK	O	D/A interface, word clock (2Fs) for 48-bit slot.
42	LRCK	O	D/A interface, LR clock (Fs) for 48-bit slot.

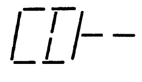
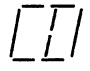
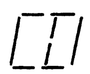
Pin No.	Pin name	I/O	Description
43	LRCKI	I	LR clock input to DAC. (48-bit slot)
44	PCMD	O	D/A interface, serial data. (2's complement, MSB first)
45	PCMDI	I	Audio data input to DAC. (48-bit slot)
46	BCK	O	D/A interface, bit clock.
47	BCKI	I	Bit clock input to DAC. (48-bit slot)
48	GTOP	O	GTOP output.
49	XUGF	O	XUFG output.
50	XPCK	O	XPLCK output.
51	GFS	O	GFS output.
52	RFCK	O	RFCK output.
53	VSS	—	GND.
54	C2PO	O	C2PO output.
55	XROF	O	XRAOF output.
56	MNT3	O	MNT3 output.
57	MNT1	O	MNT1 output.
58	MNT0	O	MNT0 output.
59	FSTT	O	Pins-73 and -74 divided-by 2/3 output.
60	C4M	O	4.2336MHz output.
61	DOUT	O	Digital Out connector output signal.
62	EMPH	O	H when the playback disc has emphasis. L when it does not.
63	EMPHI	I	DAC emphasis ON/OFF. H when ON. L when OFF
64	WFCK	O	WFCK (WRITE FRAME CLOCK) output.
65	ZEROL	O	No sound data detection output. H (L-ch) when no sound data is detected.
66	ZEROR	O	No sound data detection output. H (R-ch) when no sound data is detected.
67	DTSI	I	TEST for DAC. (Normally "L")
68	VDD	—	Power supply input. (+5V)
69	NLPWM	O	L-ch PWM output. (reversed polarity)
70	LPWM	O	L-ch PWM output. (normal polarity)
71	AVDD2	—	Power supply input to L-ch PWM driver. (Connected to +5V)
72	AVDD3	—	Power supply input to X'tal. (Connected to +5V)
73	XTAI	I	X'tal input to 33.8688MHz oscillator circuit.
74	XTAO	O	33.8688MHz X'tal oscillator circuit output.
75	AVSS1	—	GND input to X'tal. (Connected GND)
76	AVSS2	—	GND input to PWM driver. (Connected to GND)
77	NRPWM	O	R-ch PWM output. (reversed phase)
78	RPWM	O	R-ch PWM output. (normal phase)
79	DTS2	I	TEST-2 for DAC. (Normally "L")
80	DTS3	I	TEST-3 for DAC. (Normally "L")

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button. All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

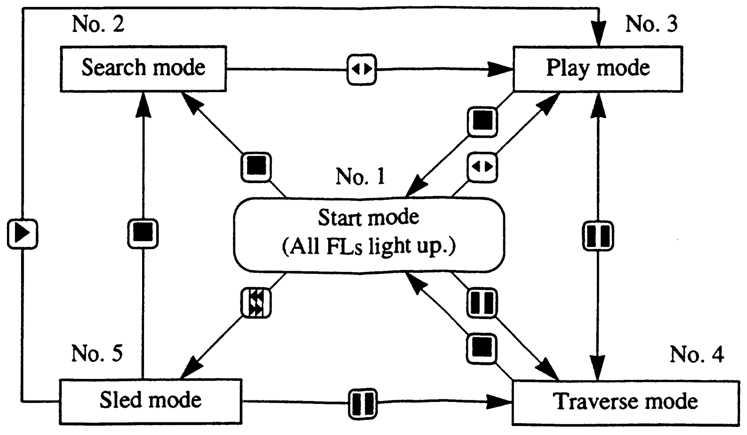
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • Laser diode turns always ON. (CD block power is ON.)	• FL display check (All displays light.) • APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key		• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key		• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key		• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

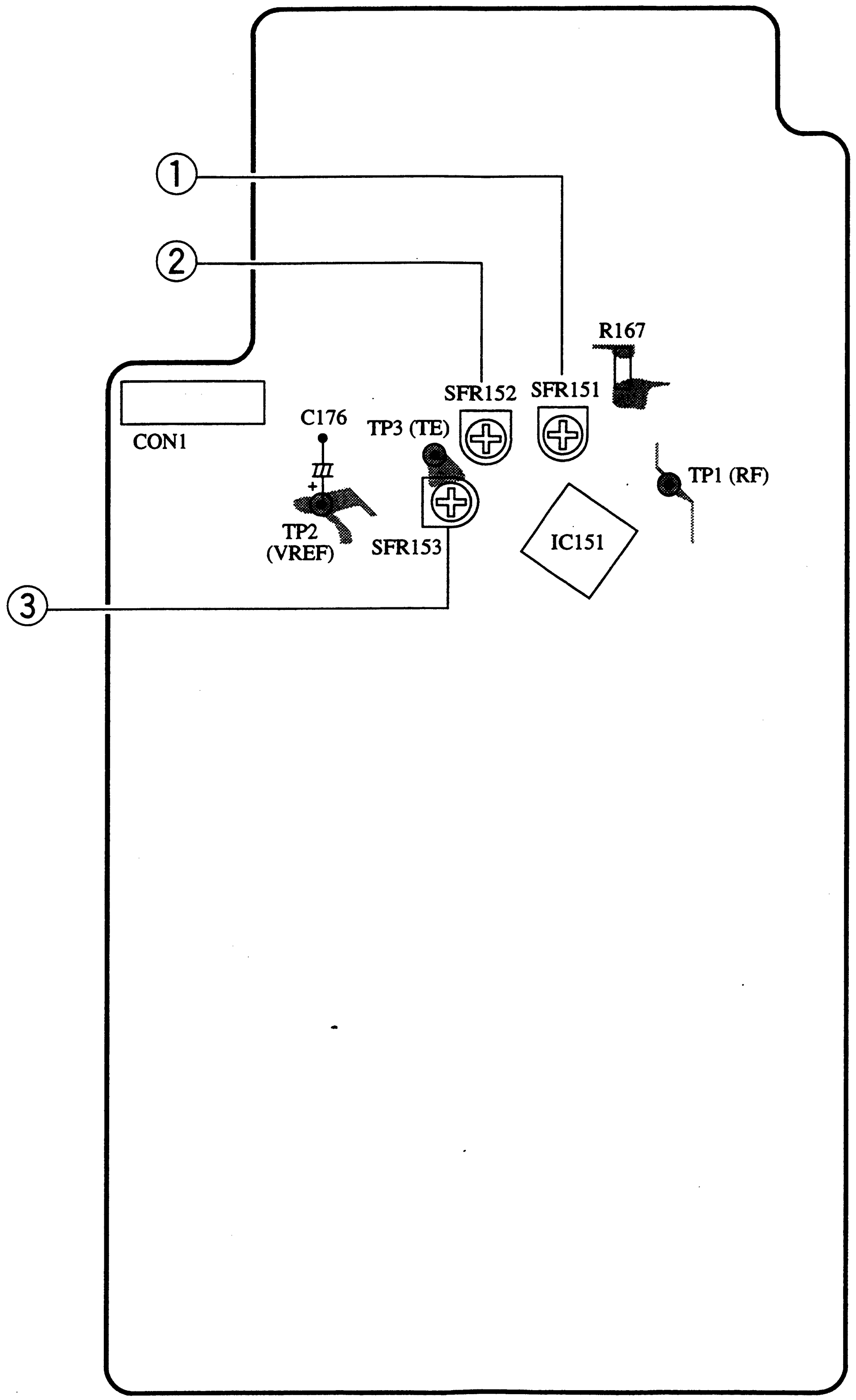
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

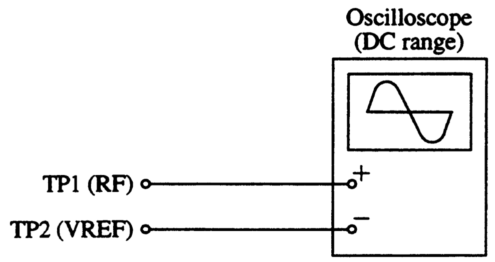
A 3CD C.B (PATTERN SIDE)



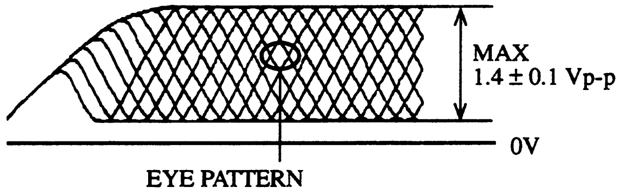
Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VREF).

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.



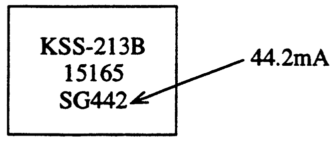
1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR151 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



EYE PATTERN
must be CLEAR and MAX.

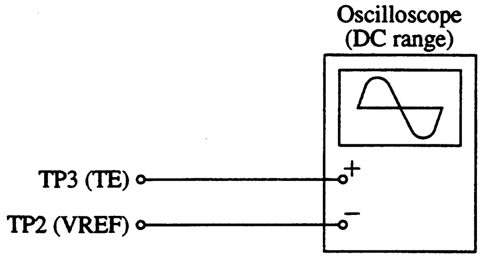
VOLT/DIV: 0.5 V
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R167 (10Ω). The difference for the specified value shown on the lavel must be within±6.0mA.

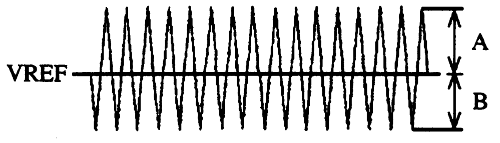


$$\text{Laser current Iop} = \frac{\text{Voltage across R167}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR153 to reduce the tracking gain.
5) Adjust SFR152 so that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.



A=B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is off, the symptoms below appear.

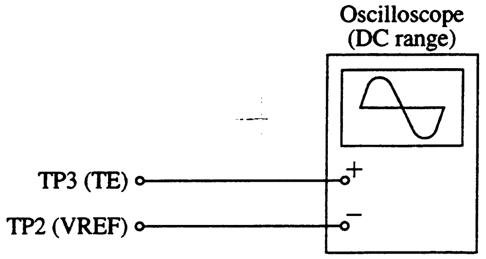
Gain / Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP→ ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP→▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	——	low
● Disc stops to rotate shortly after STOP→▶PLAY.	low or high	——
● Sound is interrupted during PLAY. Or time counter display stops.	——	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

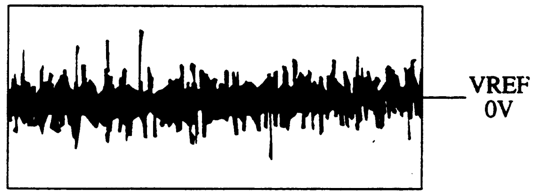
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



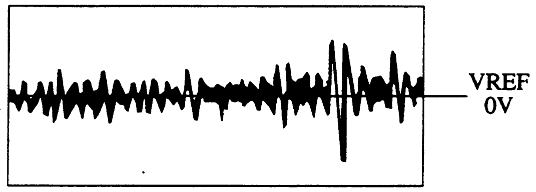
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF) of the CD C.B.
4) Adjust SFR153 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

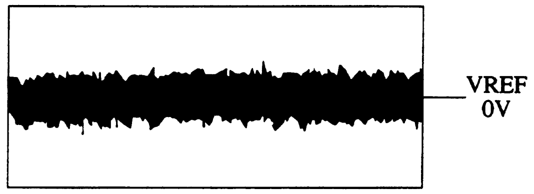
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



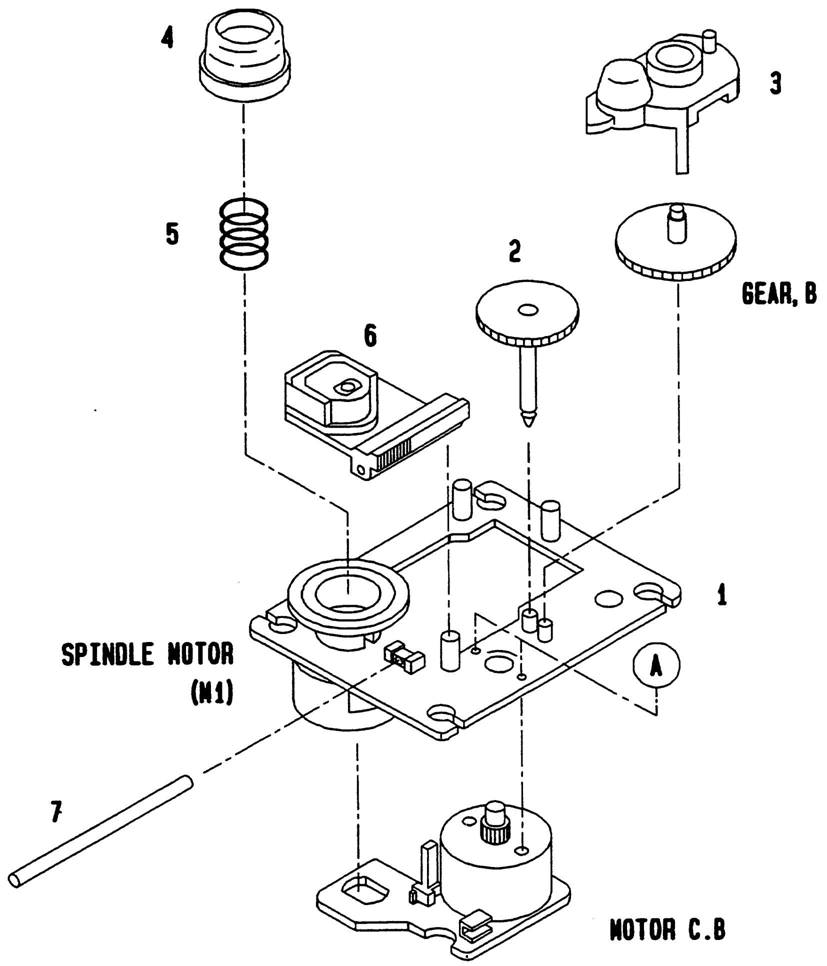
VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1 ／ 1 (KSM-2131BAM <A, B>)



CD MECHANISM PARTS LIST 1 ／ 1 (KSM-2131BAM <A, B>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	- - -		MOTOR CHASSIS ASSY
2	92-625-188-020		GEAR(A)
3	92-625-544-010		COVER
4	92-625-186-020		RING CENTER C
5	92-625-191-010		SPRING COMPRESSION
6	87-070-445-010		OPTICAL PICK UP KSS-213B
7	94-917-565-010		SHAFT SLED
A	87-261-032-210		V+2-3

4ZG-1B

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-070-336-019		IC,TC 9284 BF
	87-002-407-019		IC TA8191F
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-017-802-010		IC,LC7872E<G>
	87-017-803-010		IC,LC32464P-80<G>
TRANSISTOR			
	87-026-297-089		C-TR,DTA144TK
	89-110-373-089		C-TR,2SA1037 S
	89-420-052-089		TR 2SD2005Q (T105)
	89-421-722-389		TR,2SD2172 V/W
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-608-089		C-TR,DTC 123 JK
	89-406-555-089		TR,2SD655E<G>
	87-026-239-089		C-TR,DTC114TK<G>
	89-327-125-089		C-TR,2SC2712GR<D>
DIODE			
	87-020-465-089		DIODE,1SS133
3CD C.B			
C101	87-015-819-089		CHIP CAP 0.01
C102	87-015-819-089		CHIP CAP 0.01
C103	87-015-676-089		CAP,E 47-6.3 7L
C104	87-015-676-089		CAP,E 47-6.3 7L
C106	87-010-197-089		C-CAP,S 0.01-25 B
C107	87-010-404-089		CAP,E 4.7-50 SME
C108	87-010-197-089		C-CAP,S 0.01-25 B
C109	87-010-248-049		CAP,E 220-10 SME
C110	87-010-263-049		CAP,E 100-10
C111	87-010-309-089		C-CAP,1000P-50 CH
C112	87-010-197-089		C-CAP,S 0.01-25 B
C113	87-010-184-089		C-CAP,S 3300P-50 B
C114	87-010-060-049		CAP,E 100-16 7L
C115	87-010-197-089		C-CAP,S 0.01-25 B
C116	87-010-197-089		C-CAP,S 0.01-25 B
C117	87-010-322-089		C-CAP,S 100P-50 CH
C120	87-010-314-089		C-CAP,S 22P-50 CH
C121	87-010-314-089		C-CAP,S 22P-50 CH
C123	87-010-197-089		C-CAP,S 0.01-25 B
C124	87-010-184-089		C-CAP,S 3300P-50 B
C125	87-010-805-089		C-CAP,S 1-16F
C126	87-018-134-089		CAP,TC-U 0.01-16 Y<EXCEPT G>
C127	87-010-196-089		C-CAP,S 0.1-25 F
C152	87-010-196-089		C-CAP,S 0.1-25 F
C153	87-010-154-089		C-CAP,S 10P-50 CH
C154	87-010-322-089		C-CAP,S 100P-50 CH
C155	87-010-263-089		CAP,E 100-10 SME 5X11
C156	87-010-197-089		C-CAP,S 0.01-25 B
C157	87-012-141-089		C-CAP,S 0.22-16 F
C158	87-010-545-049		CAP E 0.22-50 SME
C159	87-015-683-080		CAP,E 33-16 7L
C160	87-010-193-089		C-CAP,S 0.033-25 F
C161	87-010-197-089		C-CAP,S 0.01-25 B

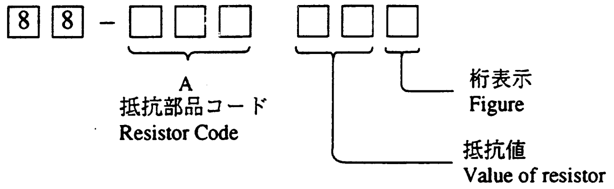
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C162	87-010-248-089		CAP,E 220-10 SME
C163	87-010-260-089		CAP,E 47-25 SME
C164	87-010-403-089		CAP,E 3.3-50 SME
C165	87-010-213-089		C-CAP,S 0.015-25 B
C166	87-010-187-089		C-CAP,S 5600P-50 B
C167	87-012-365-089		C-CAP,S 0.027-25V BK
C168	87-010-189-089		C-CAP,S 8200P-50 B
C169	87-015-883-089		C-CAP 0.022-25BK
C170	87-010-320-089		C-CAP,S 68P-50 CH
C171	87-010-382-089		CAP,E 22-25 SME
C172	87-010-197-089		C-CAP,S 0.01-25 B
C173	87-010-263-089		CAP,E 100-10 SME 5X11
C174	87-010-178-089		C-CAP,S 1000P-50 B
C175	87-010-805-089		C-CAP,S 1-16F
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	.87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-405-049		CAP,E 10-50 SME
C212	87-010-405-049		CAP,E 10-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-010-112-089		CAP,E 100-16
C232	87-010-060-049		CAP,E 100-16 7L
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-049		CAP,E 470-10 SME
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-089		CAP,E 100-10 SME 5X11
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-221-049		CAP,E 470-10 SME
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C704	87-010-178-089		C-CAP,S 1000P-50 B
C705	87-010-178-089		C-CAP,S 1000P-50 B
C712	87-010-982-049		CAP,E 33-25 GAS
C801	87-010-197-089		C-CAP,S 0.01-25 B<G>
C802	87-010-260-089		CAP,E 47-25 SME<G>
C803	87-010-194-089		C-CAP,S 0.047-25 F<G>
C804	87-010-260-089		CAP,E 47-25 SME<G>
C805	87-018-134-089		CAP,TC-U 0.01-16 Y<G>
C806	87-010-260-089		CAP,E 47-25 SME<G>
C807	87-010-405-089		CAP,E 10-50 SME<G>
C808	87-010-197-089		C-CAP,S 0.01-25 B<G>
C809	87-010-405-049		CAP,E 10-50 SME<G>
C810	87-010-313-089		C-CAP,S 18P-50 CH<G>
C811	87-010-314-089		C-CAP,S 22P-50 CH<G>
C812	87-010-313-089		C-CAP,S 18P-50 CH<G>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C813	87-010-315-089		C-CAP,S 27P-50 CH<G>
C814	87-010-197-089		C-CAP,S 0.01-25 B<G>
C815	87-010-260-049		CAP,E 47-25 SME<G>
C816	87-010-404-089		CAP,E 4.7-50 SME<G>
C817	87-010-221-089		CAP,E 470-10<G>
C818	87-010-196-089		C-CAP,S 0.1-25 F<G>
C819	87-010-321-089		C-CAP,S 82P-50 CH<G>
C820	87-010-178-089		C-CAP,S 1000P-50 B<G>
C821	87-010-196-089		C-CAP,S 0.1-25 F<G>
C822	87-010-403-089		CAP,E 3.3-50 SME<G>
C824	87-018-134-089		CAP,TC-U 0.01-16 Y
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
CON2	84-ZG1-616-019		CONN ASSY,6P H
EMI801	87-008-474-089		F-BEAD,EMI BL02RN1<G>
EMI802	87-008-474-089		F-BEAD,EMI BL02RN1<G>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
J801	87-009-502-010		JACK,PIN 1PY EARTH<G>
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-305-019		MOTOR, RF-500TB
R184	87-022-361-089		C-RES,S 47K-1/10W F
R185	87-022-361-089		C-RES,S 47K-1/10W F
R186	87-022-361-089		C-RES,S 47K-1/10W F
R187	87-022-361-089		C-RES,S 47K-1/10W F
R188	87-022-361-089		C-RES,S 47K-1/10W F
R189	87-022-361-089		C-RES,S 47K-1/10W F
R401	87-022-186-089		C-RES,82-1/4W J
R403	87-022-186-089		C-RES,82-1/4W J
SFR151	87-024-176-089		SFR,100K DIA6 V

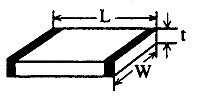
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
SFR152	87-024-171-089		SFR 4.7K DIA6 V
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
X801	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>
X802	80-JUC-601-089		VIB,XTAL 14.31MHZ<G>
LED C.B			
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1
T-T C.B			
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V
MOTOR C.B			
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

■ IC DESCRIPTION

LC7872E .... See page 62

■ MECHANICAL EXPLODED VIEW 1／1

See page 95

■ MECHANICAL PARTS LIST 1／1

See page 96

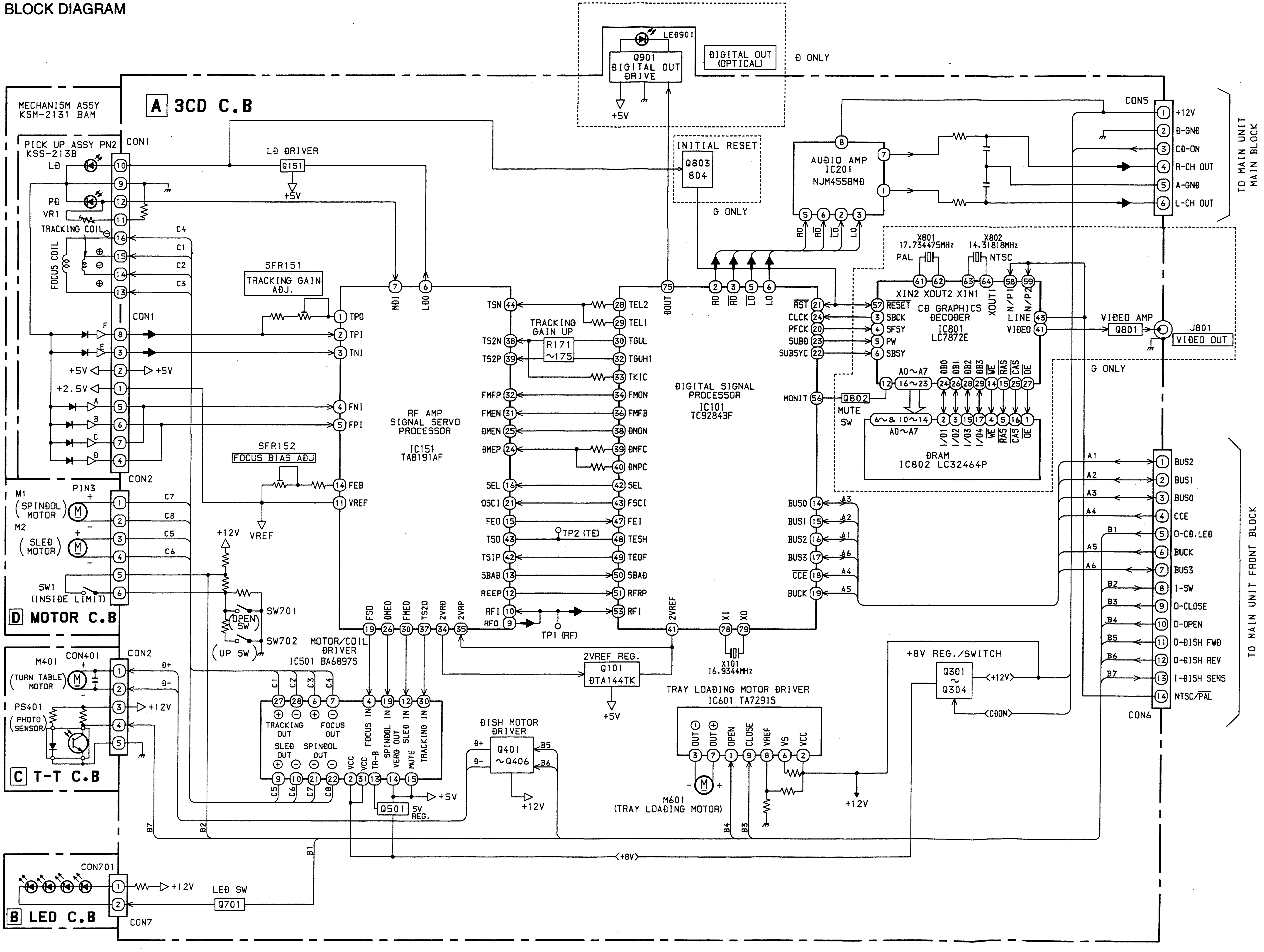
■ CD MECHANISM EXPLODED VIEW 1／1

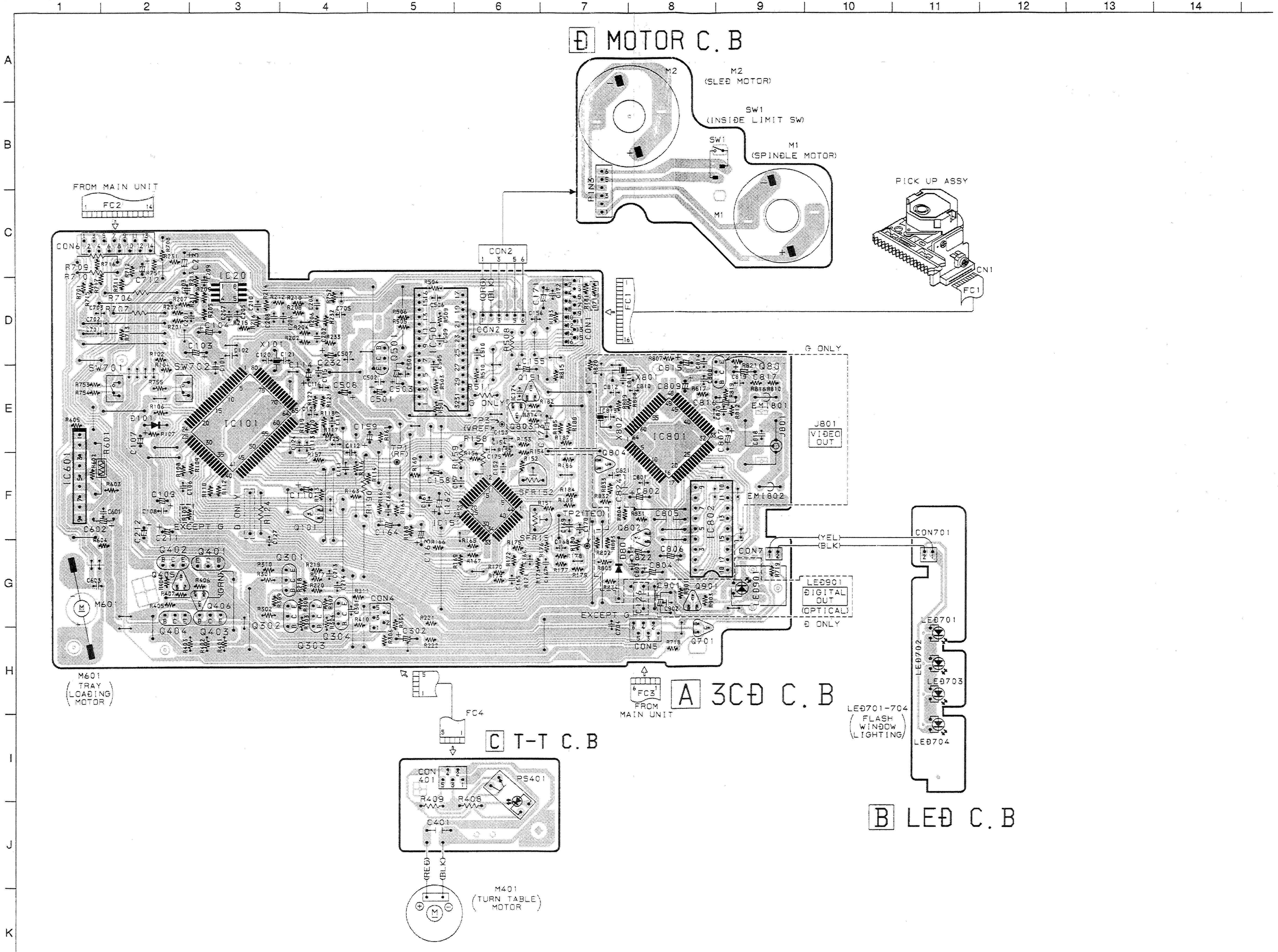
See page 114

■ CD MECHANISM PARTS LIST 1／1

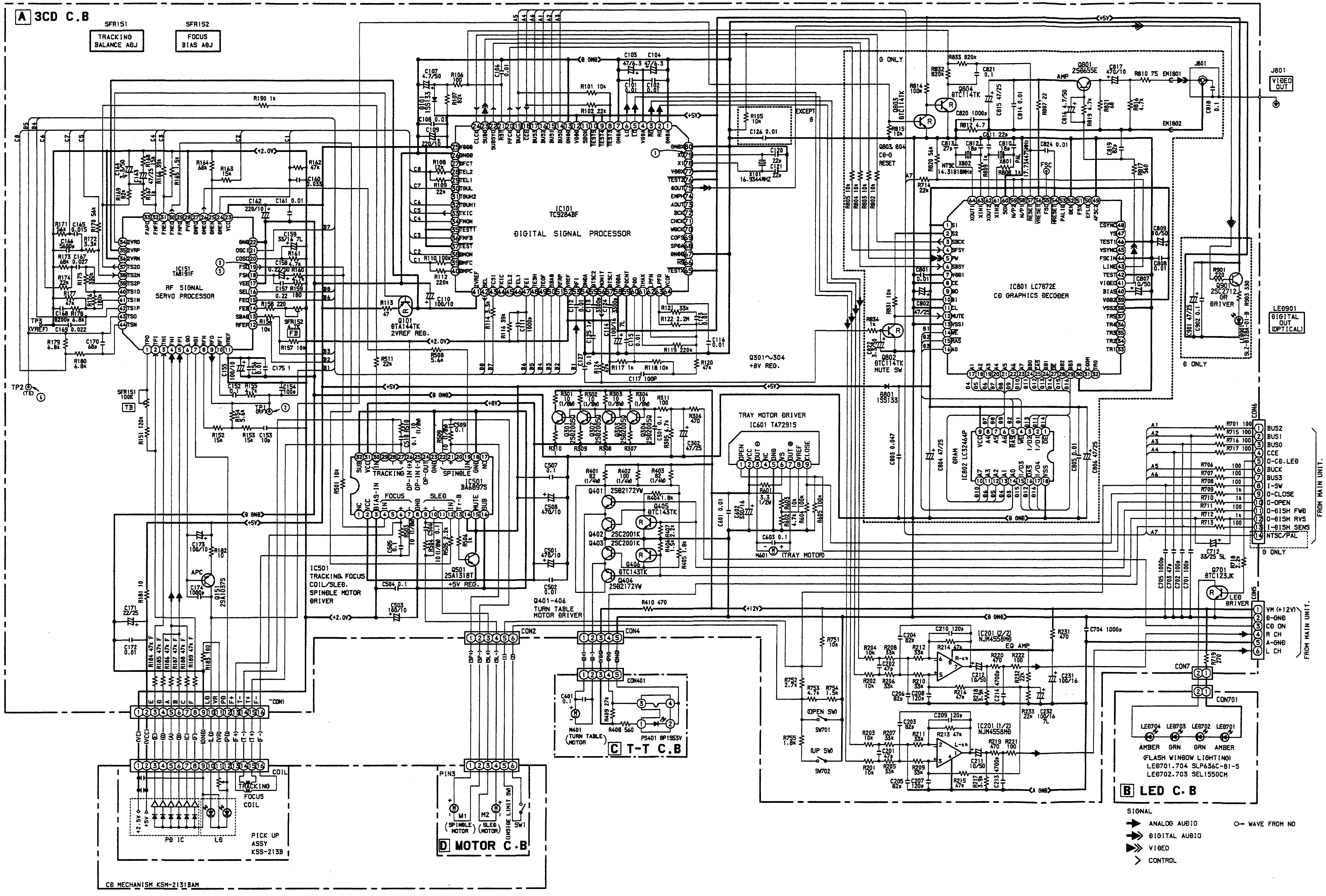
See page 114

BLOCK DIAGRAM


Q901
DIGITAL OUT DRIVE
LED901
DIGITAL OUT (OPTICAL)
D ONLY
+5V
A 3CD C.B
MECHANISM ASSY KSM-2131 BAM
PICK UP ASSY PN2 KSS-213B
LD
PD
VR1
TRACKING COIL
FOCUS COIL
CON1
LD DRIVER
Q151
+5V
INITIAL RESET
Q803 804
G ONLY
AUDIO AMP IC201 NJM4558MD
RO RO LO LO
CON5
+12V
D-GND
CD-ON
R-CH OUT
A-GND
L-CH OUT
TO MAIN UNIT MAIN BLOCK
SFR151
TRACKING GAIN ADJ.
MDI
LDO
TP0 TPI TNI FNI FPI FEB VREF
+5V
+2.5V
SFR152
FOCUS BIAS ADJ
RF AMP SIGNAL SERVO PROCESSOR
IC151 TA8191AF
TSN TS2N TS2P FMFP FMEN DMEN DMEP SEL OSCI FEO TSO TSIP SBAD REEP RFI RFO
TRACKING GAIN UP
R171 ~175
TEL2 TELI TGUL TGUH1 TKIC FMON FMFB DMON DMFC DMPC SEL FSCI FEI TESH TEOF SBAD RFRP RFI
TP2 (TE)
TP1 (RF)
DOUT
DIGITAL SIGNAL PROCESSOR
IC101 TC9284BF
RST CLCK PFCK SUBD SUBSYC
MONIT
Q802
MUTE SW
BUS0 BUS1 BUS2 BUS3 CCE BUCK
2VREF
XI XO
X101 16.9344MHz
X801 17.734475MHz
X802 14.31818MHz
PAL
NTSC
XIN2 XOUT2 XIN1
XOUT1
N/P1 N/P2
RESET SBCK SFSY PW SBSY
CD GRAPHICS DECODER
IC801 LC7872E
LINE
VIDEO
VIDEO AMP
Q801
J801
VIDEO OUT
G ONLY
A0~A7
DB0 DB1 DB2 DB3 WE RAS CAS OE
A0~A7
I/01 I/02 I/03 I/04 WE RAS CAS OE
DRAM IC802 LC32464P
CON6
BUS2 BUS1 BUS0 CCE O-CD.LED BUCK BUS3 I-SW O-CLOSE O-OPEN O-DISH FWD O-DISH REV I-DISH SENS NTSC/PAL
TO MAIN UNIT FRONT BLOCK
CON2
PIN3
M1 (SPINDOL MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT)
D MOTOR C.B
+12V
VREF
SW701
(OPEN SW)
SW702
(UP SW)
MOTOR/COIL DRIVER IC501 BA6897S
FSO DMEO FMEO TS20 2VRO 2VRP
TRACKING OUT
FOCUS OUT
SLED OUT
SPINDOL OUT
VCC VCC TR-B
FOCUS IN SPINDOL IN VERO OUT SLED IN MUTE TRACKING IN
Q501 5V REG.
+5V
2VREF REG.
Q101 DTA144TK
+5V
DISH MOTOR DRIVER
Q401 ~Q406
+12V
TRAY LOADING MOTOR DRIVER IC601 TA7291S
OUT OUT OPEN CLOSE VREF VS VCC
M601 (TRAY LOADING MOTOR)
+12V
+8V REG./SWITCH
Q301 ~ Q304
(+12V)
(CDON)
(+8V)
CON401
M401 (TURN TABLE MOTOR)
PS401 (PHOTO SENSOR)
+12V
C T-T C.B
CON701
+12V
LED SW
Q701
CON7
B LED C.B


D MOTOR C.B
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
M1 (SPINDLE MOTOR)
PIN3
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON2
(ORG)
(BLK)
CON1
IC201
IC101
IC501
IC801
IC802
IC601
IC151
G ONLY
J801 VIDEO OUT
EXCEPT G
CON7
(YEL)
(BLK)
CON701
LED901 DIGITAL OUT (OPTICAL)
CON4
CON5
M601
M601 (TRAY LOADING MOTOR)
FC3
FROM MAIN UNIT
A 3CD C.B
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
LED701
LED702
LED703
LED704
LED701-704 (FLASH WINDOW LIGHTING)
B LED C.B

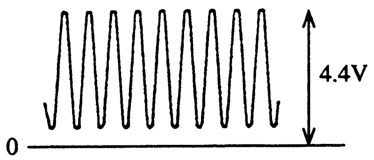
SCHEMATIC DIAGRAM



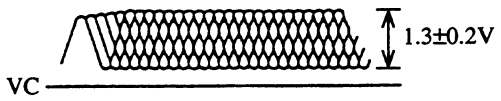
A 3CD C.B
SFR151 TRACKING BALANCE ADJ
SFR152 FOCUS BIAS ADJ
IC151 TA8191F RF SIGNAL SERVO PROCESSOR
IC101 TC9264BF DIGITAL SIGNAL PROCESSOR
IC801 LC7872E CD GRAPHICS DECODER
IC802 LC3264AP DRAM
IC501 BA6897S
IC501 TRACKING FOCUS COIL/SLED. SPINDLE MOTOR DRIVER
IC601 TA7291S TRAY MOTOR DRIVER
Q401-406 TURN TABLE MOTOR DRIVER
Q301~304 +8V REG.
Q101 DTA144TK 2VREF REG.
Q501 2SA1318T +5V REG.
Q802 DTC114TK MUTE SW
Q801 2SD655E AMP
Q803, 804 CD-G RESET
Q901 2SC2712 GR DRIVER
Q701 DTC123JK LED DRIVER
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
J801 VIDEO OUT
LED901 DIGITAL OUT (OPTICAL)
G ONLY
EXCEPT G
CON1
CON2
CON4
CON5
CON6
CON7
CON401
CON701
FROM MAIN UNIT.
BUS2
BUS1
BUSO
CCE
D-CD.LED
BUCK
BUS3
I-SW
D-CLOSE
D-OPEN
D-DISH FWD
D-DISH RVS
I-DISH SENS
NTSC/PAL
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
M401 (TURN TABLE MOTOR)
PS401 DP1S53V
C T-T C.B
OPEN SW
UP SW
SW701
SW702
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D MOTOR C.B
PD IC
LD
TRACKING FOCUS COIL
PICK UP ASSY KSS-213B
CD MECHANISM KSM-2131BAM
LED701 LED703 LED702 LED701
AMBER GRN GRN AMBER
(FLASH WINDOW LIGHTING)
LED701.704 SLP636C-81-S
LED702.703 SEL1550CM
B LED C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
WAVE FROM NO

WAVE FORM

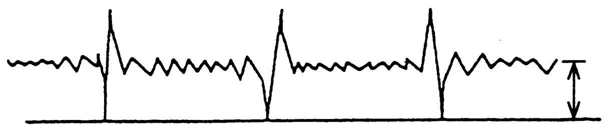
① SYSTEM CLOCK
IC101 Pin (79) (XO)
f=16.9344MHz
VOLT/DIV: 2V
TIME/DIV: 0.1µS



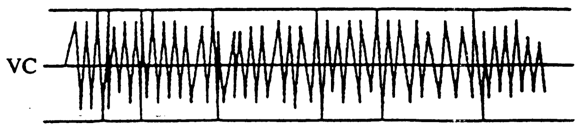
② RF
TP1 (RF)
VOLT/DIV: 500mV
TIME/DIV: 0.5µS



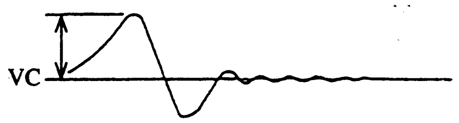
③ Focus
IC151 Pin ⑲ (FSO)
VOLT/DIV: 200mV
TIME/DIV: 2mS



④ Tracking
TP2 (TE)
TIME/DIV: 1mS

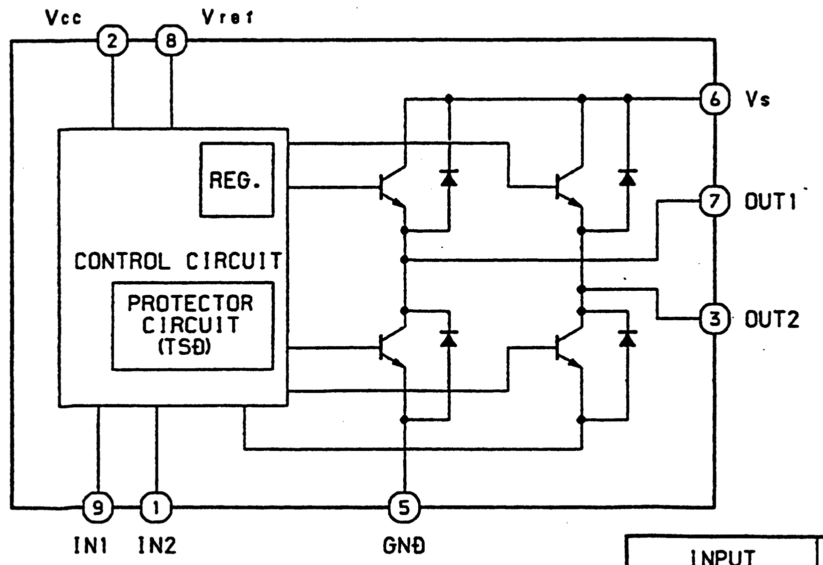


⑤ Focus Search
IC151 Pin ⑲ (FSO)



IC BLOCK DIAGRAM

IC, TA7291



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

IC DESCRIPTION

IC, TC9284BF

Pin No.	Pin name	I/O	Description
1	GNDA	—	D/A converter R-channel analog GND.
2	RO	O	R-channel data positive output.
3	$\overline{\text{RO}}$	O	R-channel data inverted output.
4	VDA	—	D/A converter power supply.
5	$\overline{\text{LO}}$	O	L-channel data inverted output.
6	LO	O	L-channel data positive output.
7	GNDA	—	D/A converter L-channel analog GND.
8~10	$\overline{\text{TEST3}}$~$\overline{\text{TEST5}}$	I	TEST pin. Normally "H" or open.
11	SBOK	O	Sub code Q data CRCC judgment result output. Judgment result OK: H
12	VDDD	—	Digital power supply. (+5 V)
13	GNDD	—	Digital GND.
14~17	BUS0~BUS3	I/O	µprocessor interface, data input/output.
18	CCE	I	µprocessor interface, chip enable signal input. When "L" : BUS 3~0 are active
19	BUCK	I	µprocessor interface, clock input.
20	PFCK	O	PB frame sync output.
21	$\overline{\text{RST}}$	I	Reset signal input. "L" at reset.
22	SUBSYC	O	Sub code block sync output. When sub code is detected,"H" at S1 position.
23	SUBD	O	Sub code P~W output.
24	CLCK	I	Sub code P~W data read clock input.
25	VDDD	—	Digital power supply. (+5 V)
26	GNDD	—	Digital GND.
27	DFCT	O	Defect detection signal output. When defect is detected: "VREF", normally "HiZ".
28	TEL2	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
29	TEL1	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
30	TGUL	O	Analog switch output for tracking servo gain up. Polarity in gain-up mode and normal mode can be selected by command.
31	TGUH2	O	Analog switch output for tracking servo gain up. "HiZ" for gain-up, normally "VREF". TGUH1 during normal playback. TGUH2: not used
32	TUGH1	O	
33	TKIC	O	Tracking actuator kick signal output. NKICx and CKICx are used for kick during tracking gain adjustment. "VREF" for outermost track."O" for moving toward inner track. Normally "HiZ".
34	FMON	O	Analog switch output to turn ON/OFF the feed servo. "HiZ" to turn ON servo. "VREF" to turn OFF servo.
35	$\overline{\text{TEST1}}$	I	TEST pin. Normally "H" or open.
36	FMFB	O	Feed motor FWD/BWD direction control signal output."2VREF" for outmost track. "O" for moving toward inner track. Normally "HiZ".
37	$\overline{\text{TEST}}$	I	TEST pin. Normally "H" or open.
38	DMON	O	Analog switch output to select gain of the disc motor drive circuit. "HiZ" for CLV servo OFF, "HiZ" or "VREF" can be selected by command.

<table>
<tr><th>Pin No.</th><th>Pin name</th><th>I/O</th><th>Description</th></tr>
<tr><td>39</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo AFC signal output.
<table>
<tr><th>Operation</th><th>Command</th><th>DMFC output</th></tr>
<tr><td>Motor acceleration</td><td>DMFK</td><td>“2VREF”</td></tr>
<tr><td>CLV servo ON</td><td>DMSV</td><td>AFC signal (PWM)</td></tr>
<tr><td>Motor brake</td><td>DMBK</td><td>“L”</td></tr>
<tr><td>CLV servo OFF</td><td>DMOFF</td><td>“VREF”</td></tr>
</table></td></tr>
<tr><td>40</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo APC signal output.</td></tr>
<tr><td>41</td><td>2VREF</td><td>—</td><td>Analog power supply. (twice the “VREF” voltage)</td></tr>
<tr><td>42</td><td>SEL</td><td>O</td><td>Servo mode select output. It turns ON/OFF the laser diode (LD) and focus servo.
<table>
<tr><th>SEL output</th><th>LD</th><th>Focus servo</th><th>Operating mode</th></tr>
<tr><td>“L”</td><td>OFF</td><td>OFF</td><td>LD OFF</td></tr>
<tr><td>“HiZ”</td><td>ON</td><td>OFF</td><td>Focus search</td></tr>
<tr><td>“H”</td><td>ON</td><td>ON</td><td>Focus ON (normal play)</td></tr>
</table></td></tr>
<tr><td>43</td><td>FCSI</td><td>O</td><td>Focus actuator drive signal output during focus search mode. “VDDA” to move the lens far from disc. “L” to move the lens closer to disc. Normally “HiZ”.</td></tr>
<tr><td>44</td><td>FKIC</td><td>O</td><td>Focus actuator drive signal output during focus adjustment mode.ÅgVDDAÅhto move the lens far from disc. “L” to move the lens closer to disc. Normally “HiZ”.</td></tr>
<tr><td>45, 46</td><td>FEL1, FEL2</td><td>O</td><td>Focus gain adjustment analog switch output. “VREF” or “HiZ”.</td></tr>
<tr><td>47</td><td>FEI</td><td>I</td><td>Focus error signal input.</td></tr>
<tr><td>48</td><td>TESH</td><td>I</td><td>Analog switch input to track error signal sample-and-hold.</td></tr>
<tr><td>49</td><td>TEOF</td><td>O</td><td>Focus gain adjustment analog switch output.“VREF” when tracking servo off.</td></tr>
<tr><td>50</td><td>SBAD</td><td>I</td><td>Sub beam added signal input.</td></tr>
<tr><td>51</td><td>RFRP</td><td>I</td><td>RF ripple signal input.</td></tr>
<tr><td>52</td><td>VREF</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>53</td><td>RFI</td><td>I</td><td>RF signal input.</td></tr>
<tr><td>54</td><td>GNDA</td><td>—</td><td>Analog GND.</td></tr>
<tr><td>55</td><td>DTSC2</td><td>O</td><td>Data slice control EFM signal inverted output.</td></tr>
<tr><td>56</td><td>MONI T</td><td>O</td><td>Internal signal monitored output. EFMO, PLCK or LOCK signals can be selected by command. Can be muted. (Not used)</td></tr>
<tr><td>57</td><td>DTSC 1</td><td>O</td><td>Data slice control EFM signal positive polarity output.</td></tr>
<tr><td>58</td><td>VDDA</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>59</td><td>PDCNT</td><td>I</td><td>PDO output control signal input. “L” to fix to “HiZ” forcibly. “H” : normal output.</td></tr>
<tr><td>60</td><td>PDO</td><td>O</td><td>Phase error signal between EFM and PLCK signals is output.</td></tr>
<tr><td>61</td><td>TMAX</td><td>O</td><td>TMAX detected result output.
<table>
<tr><th>TMAX detected result</th><th>TMAX output</th></tr>
<tr><td>Longer than specified cycle</td><td>“L”</td></tr>
<tr><td>Shorter than specified cycle</td><td>“VREF”</td></tr>
<tr><td>Within specified cycle</td><td>“HiZ”</td></tr>
</table></td></tr>
<tr><td>62</td><td>LPFN</td><td>I</td><td>Low-pass filter amplifier inverted input.</td></tr>
</table>

Pin No.	Pin name	I/O	Description
63	LPFO	O	Low-pass filter amplifier output.
64	VCOF	O	VCO filter output.
65	TESTX	I	TEST pin. Normally “H” or “L” .(Connected to +5 V)
66	$\overline{\text{HS}}$	O	Double speed mode output. “H” : normal speed. “L” : double speed
67	GNDD	—	Digital GND.
68	SPDA	O	Processor status signal output.
69	COFS	O	Correction circuit frame clock (7.35 kHz) output.
70	WDCK	O	Word clock (88.2 kHz) output. SUBQ, BUFOV or 1PF can be selected by the µprocessor command. (Not used)
71	CHCK	O	Channel clock (44.1 kHz) output. “L”for L-channel. “H” for R-channel.
72	BCK	O	Bit clock (1.4112 MHz) output.
73	AOUT	O	Audio data output. (Not used)
74	EMPH	O	Emphasis ON/OFF select signal. “H” : emphasis ON. “L” for emphasis OFF
75	DOUT	O	DIGITAL SIGNAL output.
76	$\overline{\text{TEST2}}$	I	TEST pin. Normally “H”.
77	VDDX	—	Crystal oscillator circuit power supply.
78	XI	I	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
79	XO	O	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
80	GNDX	—	Crystal oscillator GND.

IC, TA8191F

Pin No.	Pin Name	I/O	Description
1	TPO	O	Sub beam I-V amplifier (TA Amp) output terminal.
2	TPI	I	Sub beam I-V amplifier (TA Amp) input terminal.
3	TNI	I	Sub beam I-V amplifier (TA Amp) input terminal.
4	FNI	I	Main beam I-V amplifier (FN Amp) input terminal.
5	FPI	I	Main beam I-V amplifier (FP Amp) input terminal.
6	LDO	O	Laser diode amplifier (LD Amp) output terminal.
7	MDI	I	Monitor photo diode amplifier (MD Amp) input terminal.
8	RFN	I	RF amplifier reversed phase input terminal.
9	RFO	O	RF amplifier output terminal.
10	RFI	I	RF ripple signal generator circuit input terminal.
11	VREF	O	Reference voltage output terminal (+2.1 V).
12	RFRP	O	RF ripple signal output terminal.
13	SBAD	O	Scar detection signal output terminal.
14	FEB	I	Focus error balance adjustment input terminal.
15	FEO	O	Focus error amplifier (FE Amp) output terminal.
16	SEL	I	Analog switch control signal input terminal.
17	VEE	—	Power supply terminal. (TA8190F; -5 V, TA8191F; GND)
18	FSN	I	Focus output amplifier (FS Amp) reversed phase input terminal.
19	FSO	O	Focus output amplifier (FS Amp) output terminal.
20	COSC	O	External capacitor to generate focus search signal is connected to this terminal.
21	OSCI	I	External input to control the built-in power supply to generate focus search signal is connected to this terminal.
22	GND	—	GND.
23	VCC	I	Power supply terminal (+5 V).
24	DMEP	I	Disc motor amplifier (DM Amp) positive phase input terminal.
25	DMEN	I	Disc motor amplifier (DM Amp) reversed phase input terminal.
26	DMEO	O	Disc motor amplifier (DM Amp) output terminal.
27	DMPO	O	Disc motor drive amplifier (DMP Amp) output terminal. (Not used).
28	PVR	I	Drive amplifier reference voltage input terminal.
29	FMPO	O	Feed motor drive amplifier (FMP Amp) output terminal. (Not used).
30	FMEO	O	Feed motor amplifier (FM Amp) output terminal.
31	FMEN	I	Feed motor amplifier (FM Amp) reversed phase input terminal.
32	FMEP	O	Feed motor amplifier (FM Amp) positive phase input terminal.
33	FAPO	O	Focus actuator drive amplifier (FAP Amp) output terminal (Not used).
34	2VRO	I	2 V REF amplifier (2 V REF Amp) output terminal.
35	2VRP	I	2 V REF amplifier (2 V REF Amp) positive phase input terminal.
36	2VRN	I	2 V REF amplifier (2 V REF Amp) reversed phase input terminal.
37	TS2O	O	Tracking servo amplifier 2 (TS2 Amp) output terminal.
38	TS2N	I	Tracking servo amplifier 2 (TS2 Amp) reversed phase input terminal.
39	TS2P	I	Tracking servo amplifier 2 (TS2 Amp) positive phase input terminal.
40	TS1O	O	Tracking servo amplifier 1 (TS1 Amp) output terminal.
41	TS1N	I	Tracking servo amplifier 1 (TS1 Amp) reversed phase input terminal.
42	TS1P	I	Tracking servo amplifier 1 (TS1 Amp) positive phase input terminal.
43	TSO	O	Tracking output amplifier (TS Amp) output terminal.
44	TSN	I	Tracking output amplifier (TS Amp) reversed phase input terminal.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

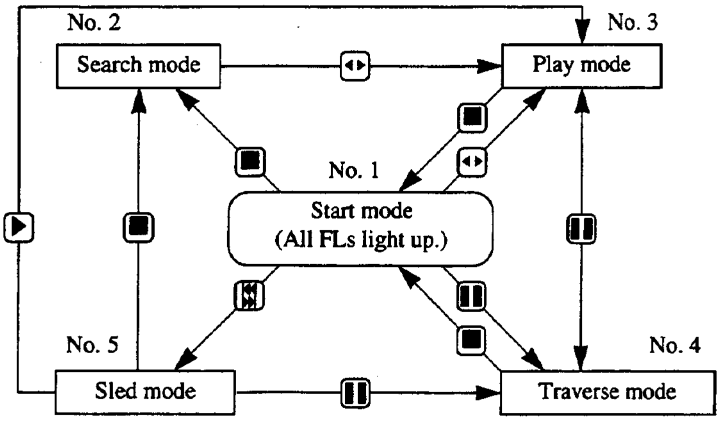
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. (CD block power is ON.) • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

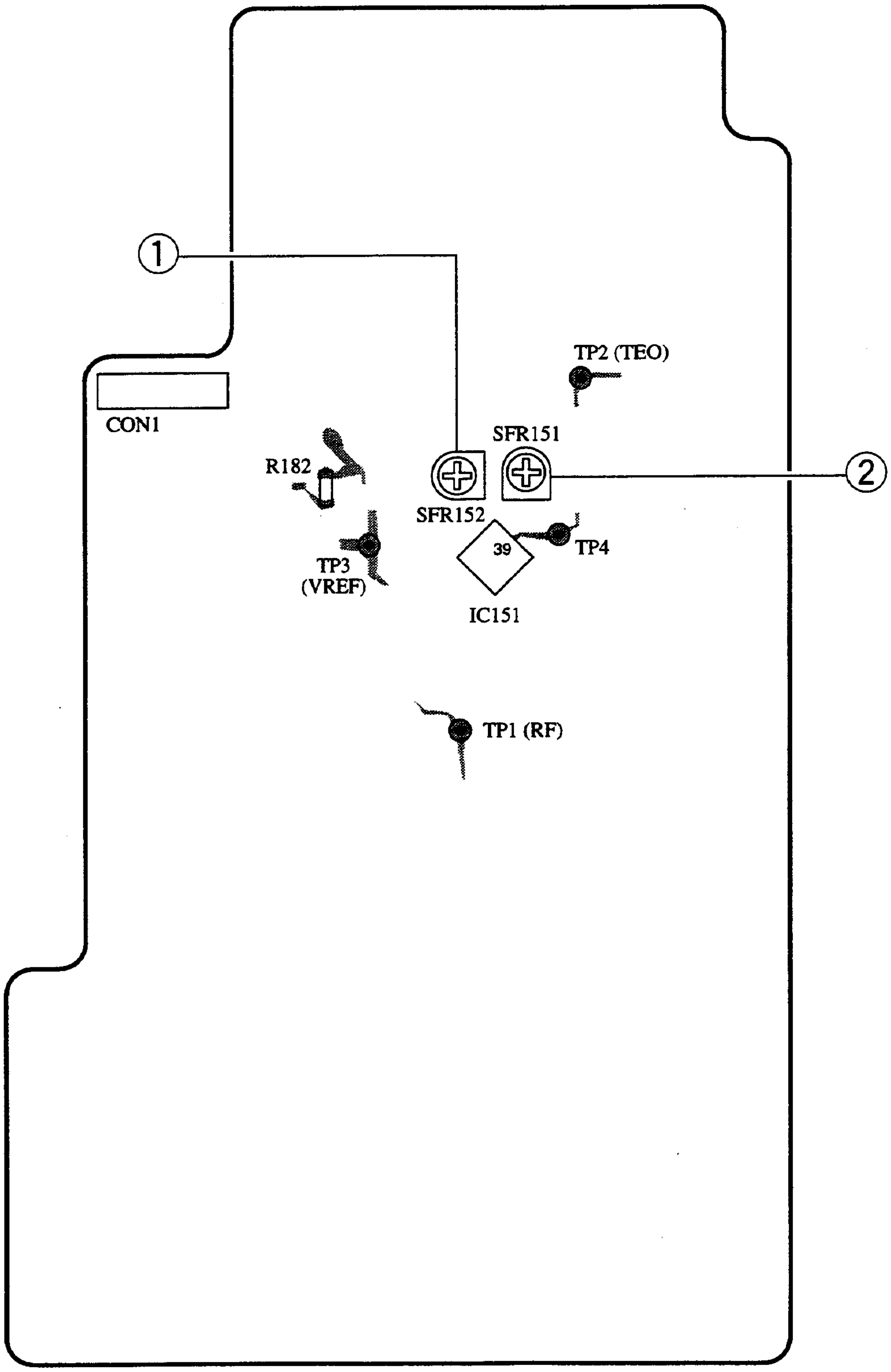
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

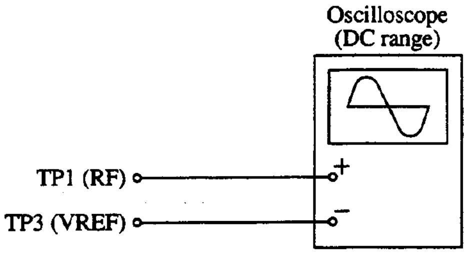
A 3CD C.B (PATTERN SIDE)


①
②
CON1
R182
SFR152
SFR151
TP2 (TEO)
TP3
(VREF)
39
TP4
IC151
TP1 (RF)

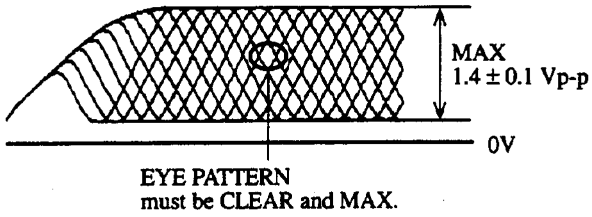
Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

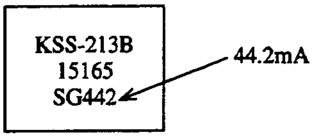

Oscilloscope
(DC range)
TP1 (RF)
TP3 (VREF)
+
–

1) Connect an oscilloscope to test points TP1 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Adjust SFR152 so that RF signal of the test point TP2 (RF) is MAX and CLEARREST.


MAX
1.4 ± 0.1 Vp-p
0V
EYE PATTERN
must be CLEAR and MAX.

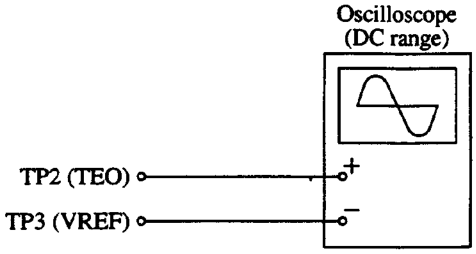
VOLT/DIV: 0.5V
TIME/DIV: 0.5µS

Note : The current of the laser signal can be checked with the voltages on both sides of R182 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

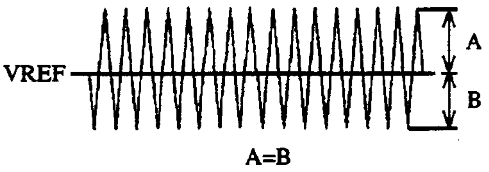

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R182}}{10\Omega}$$

2. Tracking Balance Adjustment


Oscilloscope
(DC range)
TP2 (TEO)
TP3 (VREF)
+
–

1) Short circuit between TP3 (VREF) and TP4.
2) Connect an oscilloscope to test points TP2 (TEO) and TP3 (VREF).
3) Turn on the power switch.
4) Insert test disc TCD-782 (YEDS-18) and press the PLAY (▶) button.
5) Adjust SFR151 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the test point TP3 (VREF) and TP4.



VOLT/DIV: 20mV
TIME/DIV: 2mS

4ZG-1Z

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-A20-165-010		C-IC,LA9230M
	87-A20-164-010		C-IC,LC78630E-T
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
TRANSISTOR			
	87-026-463-089		TR, 2SA933S (RS)
	89-406-555-089		TR,2SD655E
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-470-089		TR,HN1C03 F B
	87-026-608-089		C-TR,DTC 123 JK
	89-327-125-089		C-TR,2SC2712GR<D>
DIODE			
	87-020-465-089		DIODE,1SS133
3CD C.B			
C11	87-016-081-089		C-CAP,S 0.1-16 RK
C12	87-012-157-089		C-CAP,S 330P-50 CH
C13	87-016-369-089		C-CAP,S 0.033-25 B K
C14	87-016-081-089		C-CAP,S 0.1-16 RK
C15	87-010-596-089		C-CAP,S 0.047-16 RK
C16	87-010-956-089		C-CAP,S 0.068-25 B
C17	87-010-182-089		C-CAP,S 2200P-50 B
C18	87-016-369-089		C-CAP,S 0.033-25 B K
C19	87-010-213-089		C-CAP,S 0.015-25 B
C20	87-010-178-089		C-CAP,S 1000P-50 B
C21	87-012-393-089		C-CAP,S 0.22-16,R,K
C22	87-016-083-089		C-CAP,S 0.15-16 RK
C23	87-010-197-089		C-CAP,S 0.01-25 B
C24	87-010-186-089		C-CAP,S 4700P-50 B
C25	87-015-694-089		CAP E 0.47-50-7L
C26	87-010-322-089		C-CAP,S 100P-50 CH
C27	87-015-686-089		CAP,E 22-25 7L
C28	87-015-697-089		CAP,E 3.3-50 7L
C29	87-010-184-089		C-CAP,S 3300P-50 B
C30	87-010-146-089		C-CAP,S 2P-50 CH
C31	87-010-186-089		C-CAP,S 4700P-50 B
C32	87-010-148-089		C-CAP,S 4P-50 CH
C33	87-016-081-089		C-CAP,S 0.1-16 RK
C35	87-010-196-089		C-CAP,S 0.1-25 F
C37	87-010-405-089		CAP,E 10-50 SME
C38	87-010-263-089		CAP,E 100-10 SME
C39	87-010-197-089		C-CAP,S 0.01-25 B
C40	87-010-401-089		CAP,E 1-50 SME
C41	87-016-463-089		C-CAP,S 0.33-16 B
C42	87-010-263-089		CAP,E 100-10 SME
C43	87-018-134-089		CAP,TC-U 0.01-16 Y
C44	87-010-263-089		CAP,E 100-10 SME
C46	87-010-196-089		C-CAP,S 0.1-25 F
C47	87-015-684-010		CAP,E 47-16 7L
C48	87-010-196-089		C-CAP,S 0.1-25 F
C50	87-010-197-089		C-CAP,S 0.01-25 B
C51	87-010-263-089		CAP,E 100-10 SME
C101	87-016-081-089		C-CAP,S 0.1-16 RK
C102	87-016-081-089		C-CAP,S 0.1-16 RK
C103	87-012-149-089		C-CAP, S 30P-50 CH
C105	87-010-196-089		C-CAP,S 0.1-25 F
C106	87-010-196-089		C-CAP,S 0.1-25 F
C108	87-010-154-089		C-CAP,S 10P-50 CH
C109	87-010-154-089		C-CAP,S 10P-50 CH
C111	87-010-196-089		C-CAP,S 0.1-25 F
C112	87-010-404-089		CAP,E 4.7-50 SME
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-263-089		CAP,E 100-10 SME
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-010-318-089		C-CAP,S 47P-50 CH
C208	87-010-318-089		C-CAP,S 47P-50 CH
C209	87-010-318-089		C-CAP,S 47P-50 CH
C210	87-010-318-089		C-CAP,S 47P-50 CH
C211	87-010-403-089		CAP,E 3.3-50 SME
C212	87-010-403-089		CAP,E 3.3-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C215	87-010-555-049		CAP,E 100-10 GAS
C216	87-010-384-089		CAP,E 100-25 SME
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-089		CAP,E 470-10 11L
C502	87-010-197-089		C-CAP,S 0.01-25 B
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-322-089		C-CAP,S 100P-50 CH
C704	87-010-322-089		C-CAP,S 100P-50 CH
C705	87-018-131-089		CAP,TC-U 1000P-50 B
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
FC5	84-ZG1-630-019		CABLE FFC 6P-1.25
L11	87-003-102-089		COIL,10UH
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-383-019		MOT,M9I T2
R102	87-022-345-089		C-RES,S 1.2K-1/10W F
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
LED C.B			
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
T-T C.B			
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR, (BCH3B14)
PS401	87-026-573-019		P-SNSR, GP1S53V
DRIVE C.B			
M1	87-045-358-019		MOT, RF-310TA 43
M2	87-045-356-019		MOT, RF-310TA 30
SW1	87-A90-042-019		SW, LEAF MSW 17310 MVPO

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

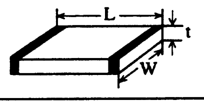
8 8 - □□□ □□□

A
抵抗部品コード
Resistor Code

桁表示
Figure

抵抗値
Value of resistor

チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード :A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

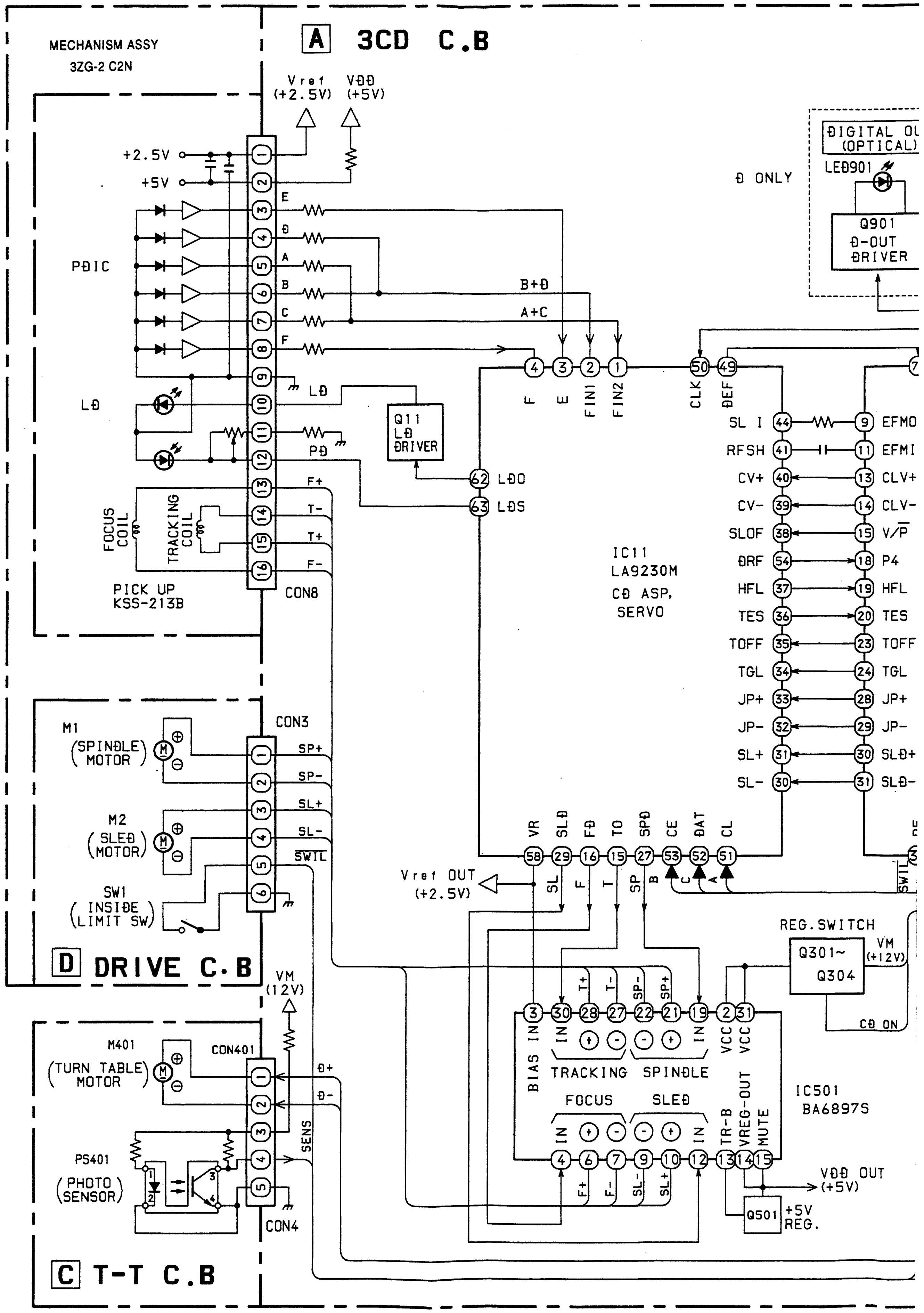
- ■ MECHANICAL EXPLODED VIEW 1／1

  See page 95

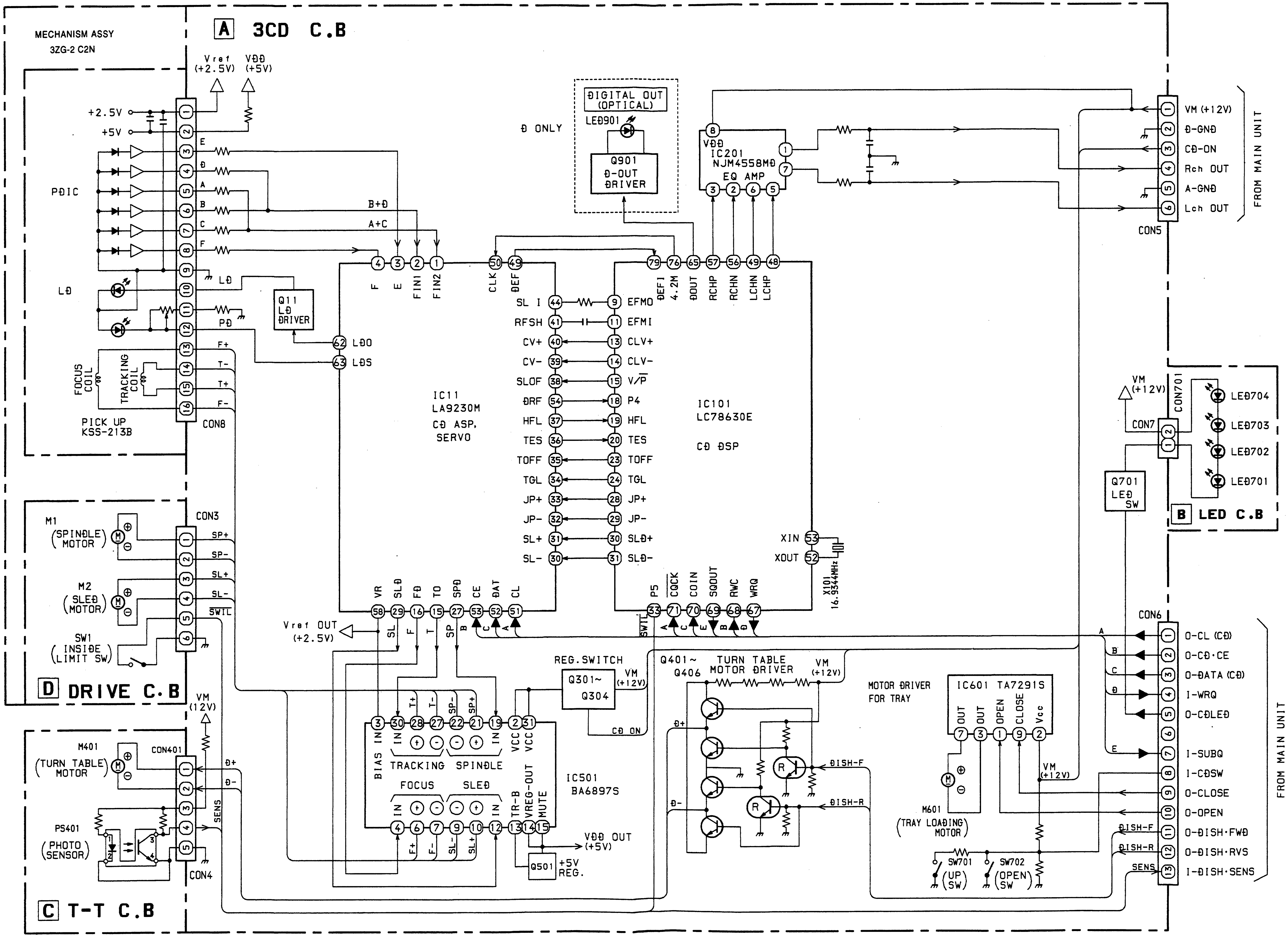
- ■ MECHANICAL PARTS LIST 1／1

  See page 96

BLOCK DIAGRAM

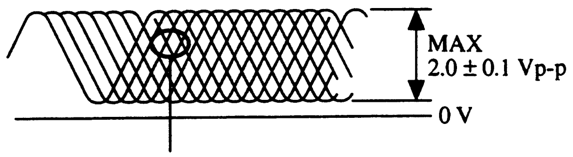

MECHANISM ASSY
3ZG-2 C2N
A 3CD C.B
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
E
D
A
B
C
F
PDIC
LD
PD
FOCUS COIL
TRACKING COIL
PICK UP KSS-213B
CON8
F+
T-
T+
F-
Q11 LD DRIVER
LDO
LDS
B+D
A+C
F
E
FIN1
FIN2
CLK
DEF
D ONLY
DIGITAL OU (OPTICAL)
LED901
Q901 D-OUT DRIVER
SL I
RFSH
CV+
CV-
SLOF
DRF
HFL
TES
TOFF
TGL
JP+
JP-
SL+
SL-
EFMO
EFMI
CLV+
CLV-
V/P
P4
HFL
TES
TOFF
TGL
JP+
JP-
SLD+
SLD-
IC11 LA9230M
CD ASP, SERVO
VR
SLD
FD
TO
SPD
CE
DAT
CL
Vref OUT (+2.5V)
SL
F
T
SP
B
C
A
SWIL
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CON3
SP+
SP-
SL+
SL-
SWIL
D DRIVE C.B
VM (12V)
M401 (TURN TABLE MOTOR)
CON401
D+
D-
PS401 (PHOTO SENSOR)
SENS
CON4
C T-T C.B
REG.SWITCH
Q301~ Q304
VM (+12V)
CD ON
T+
T-
SP-
SP+
BIAS IN
IN
TRACKING
SPINDLE
VCC
FOCUS
SLED
TR-B
VREG-OUT
MUTE
F+
F-
SL-
SL+
IC501 BA6897S
VDD OUT (+5V)
Q501
+5V REG.

BLOCK DIAGRAM


MECHANISM ASSY
3ZG-2 C2N
A 3CD C.B
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
PDIC
LD
FOCUS COIL
TRACKING COIL
PICK UP KSS-213B
CON8
E
D
A
B
C
F
LD
PD
F+
T-
T+
F-
Q11 LD DRIVER
B+D
A+C
F
E
FIN1
FIN2
LDO
LDS
IC11 LA9230M
CD ASP, SERVO
CLK
DEF
SL I
RFSH
CV+
CV-
SLOF
DRF
HFL
TES
TOFF
TGL
JP+
JP-
SL+
SL-
EFMO
EFMI
CLV+
CLV-
V/P
P4
HFL
TES
TOFF
TGL
JP+
JP-
SLD+
SLD-
IC101 LC78630E
CD DSP
DEFI
4.2M
DOUT
RCHP
RCHN
LCHN
LCHP
XIN
XOUT
X101 16.9344MHz
D ONLY
DIGITAL OUT (OPTICAL)
LED901
Q901 D-OUT DRIVER
VDD
IC201 NJM4558MD
EQ AMP
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
CON5
FROM MAIN UNIT
VM (+12V)
CON701
CON7
LED704
LED703
LED702
LED701
Q701 LED SW
B LED C.B
CON6
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
FROM MAIN UNIT
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CON3
SP+
SP-
SL+
SL-
SWIL
D DRIVE C.B
VR
SLD
FD
TO
SPD
CE
DAT
CL
P5
CQCK
COIN
SQOUT
RWC
WRQ
SWIL
Vref OUT (+2.5V)
SL
F
T
SP
B
C
A
A
C
E
B
D
REG.SWITCH
Q301~ Q304
VM (+12V)
CD ON
BIAS IN
IN
TRACKING
SPINDLE
FOCUS
SLED
VCC
TR-B
VREG-OUT
MUTE
IC501 BA6897S
VDD OUT (+5V)
Q501 +5V REG.
Q401~ Q406 TURN TABLE MOTOR DRIVER
VM (+12V)
D+
D-
DISH-F
DISH-R
MOTOR DRIVER FOR TRAY
IC601 TA7291S
OUT
OUT
OPEN
CLOSE
Vcc
M601 (TRAY LOADING MOTOR)
VM (+12V)
SW701 (UP SW)
SW702 (OPEN SW)
DISH-F
DISH-R
SENS
VM (12V)
M401 (TURN TABLE MOTOR)
CON401
PS401 (PHOTO SENSOR)
CON4
SENS
C T-T C.B

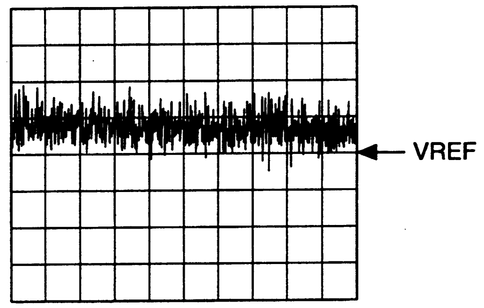
WAVE FORM

① IC11 Pin ㊶ (RFSM) VOLT/DIV: 0.5V TIME/DIV: 1µS

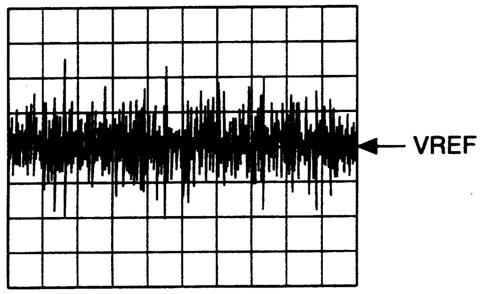


EYE PATTERN
must be CLEAR and MAX.

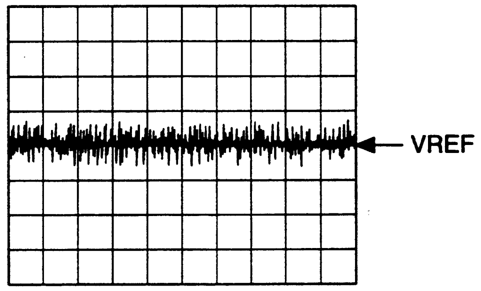
② IC11 Pin ⑯ (FD) VOLT/DIV: 100mV TIME/DIV: 1mS



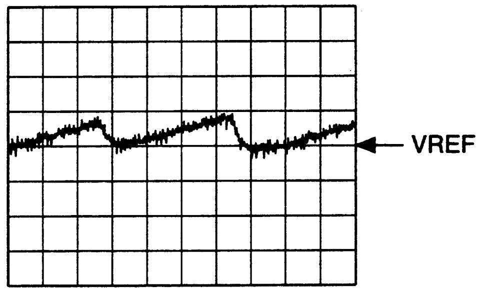
③ IC11 Pin ⑮ (TO) VOLT/DIV: 100mV TIME/DIV: 1mS



④ IC11 Pin ㉗ (SPD) VOLT/DIV: 100mV TIME/DIV: 1mS

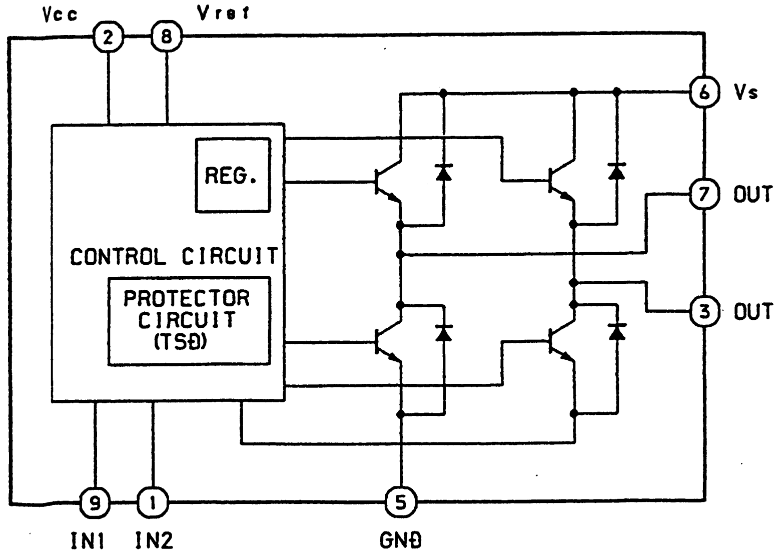


⑤ IC11 Pin ㉙ (SLD) VOLT/DIV: 200mV TIME/DIV: 2S



IC BLOCK DIAGRAM

IC, TA7291

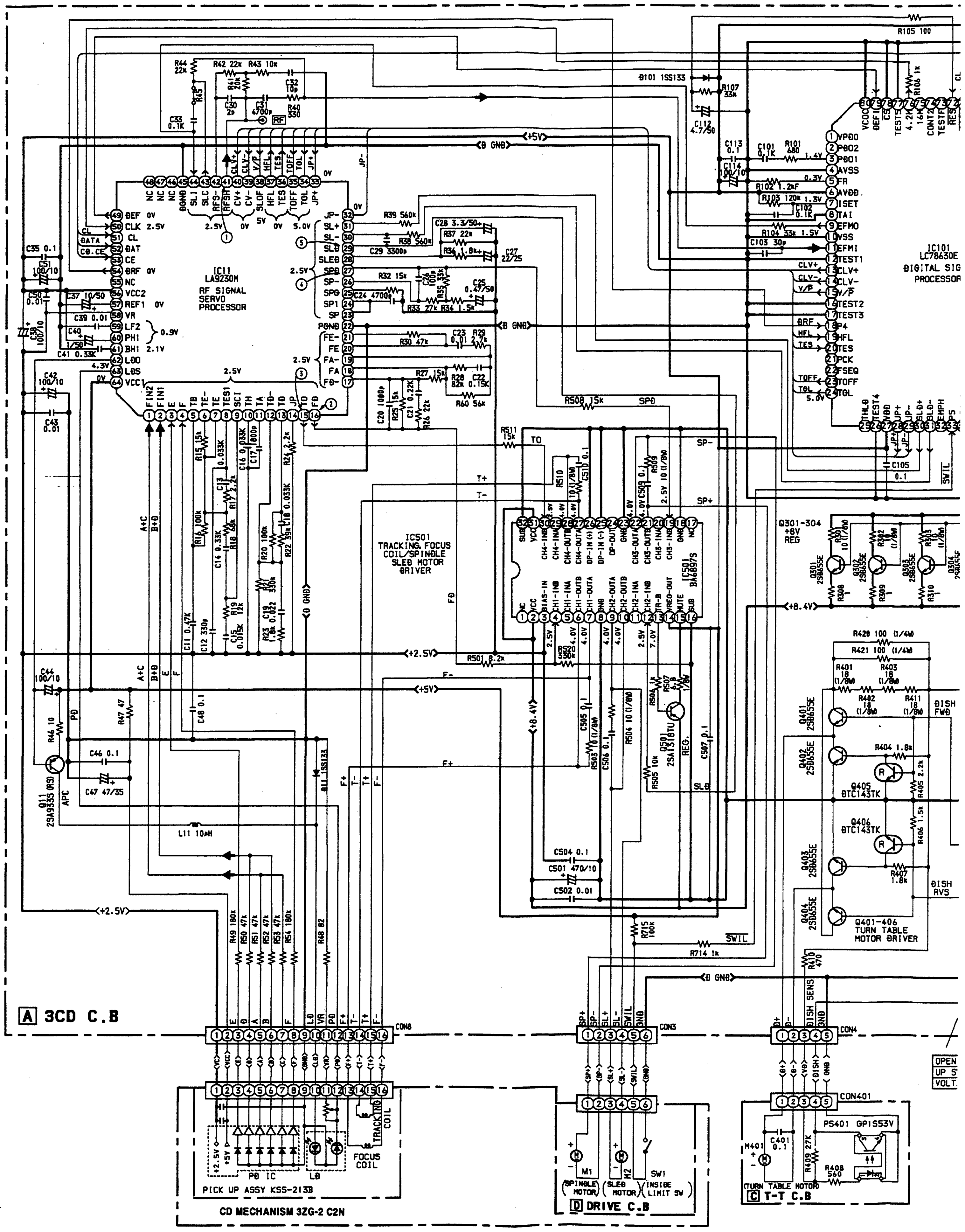


Vcc
Vref
2
8
6 Vs
7 OUT1
3 OUT2
REG.
CONTROL CIRCUIT
PROTECTOR CIRCUIT (TSD)
9
1
5
IN1
IN2
GND

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

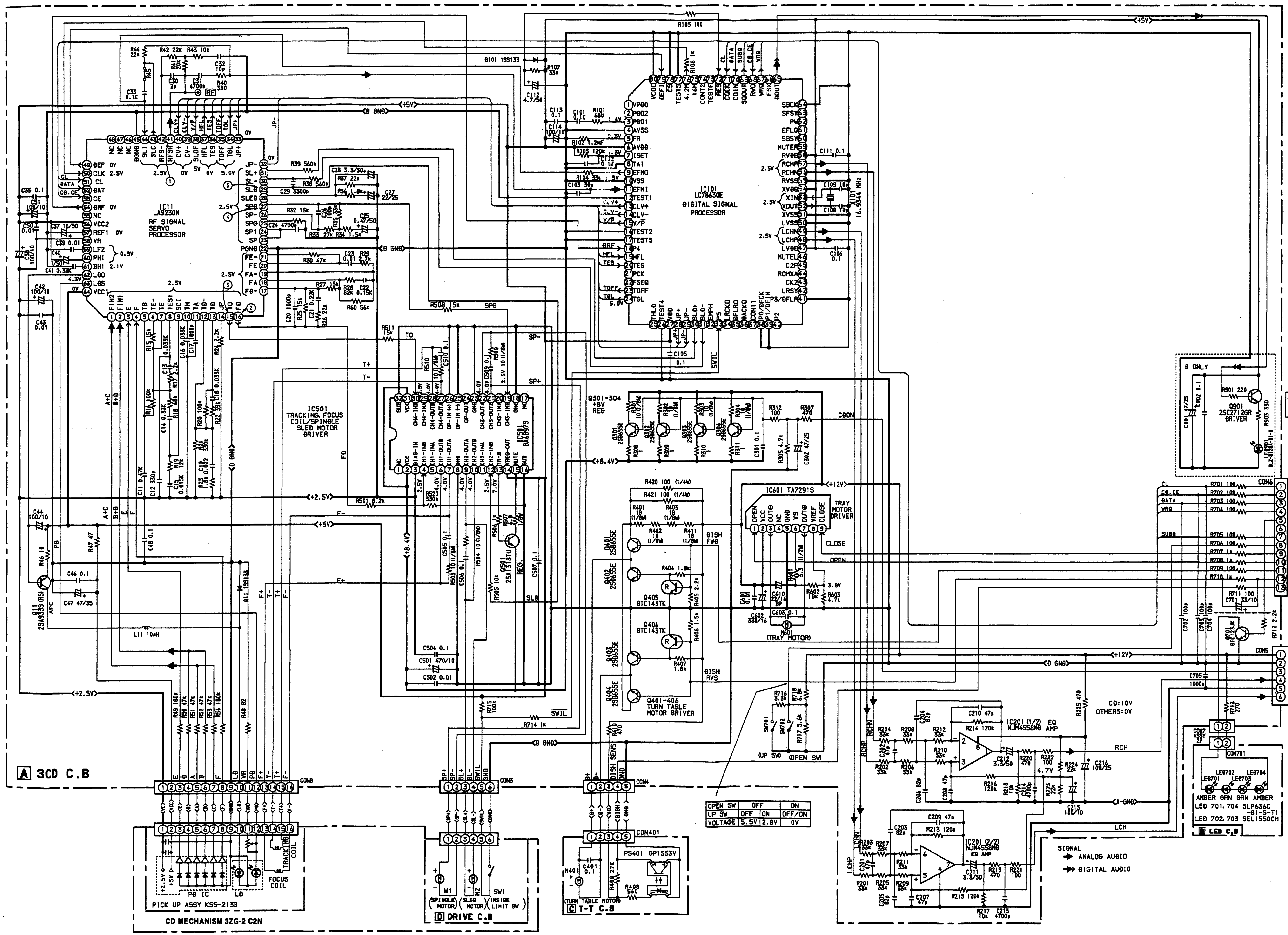
∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

SCHEMATIC DIAGRAM

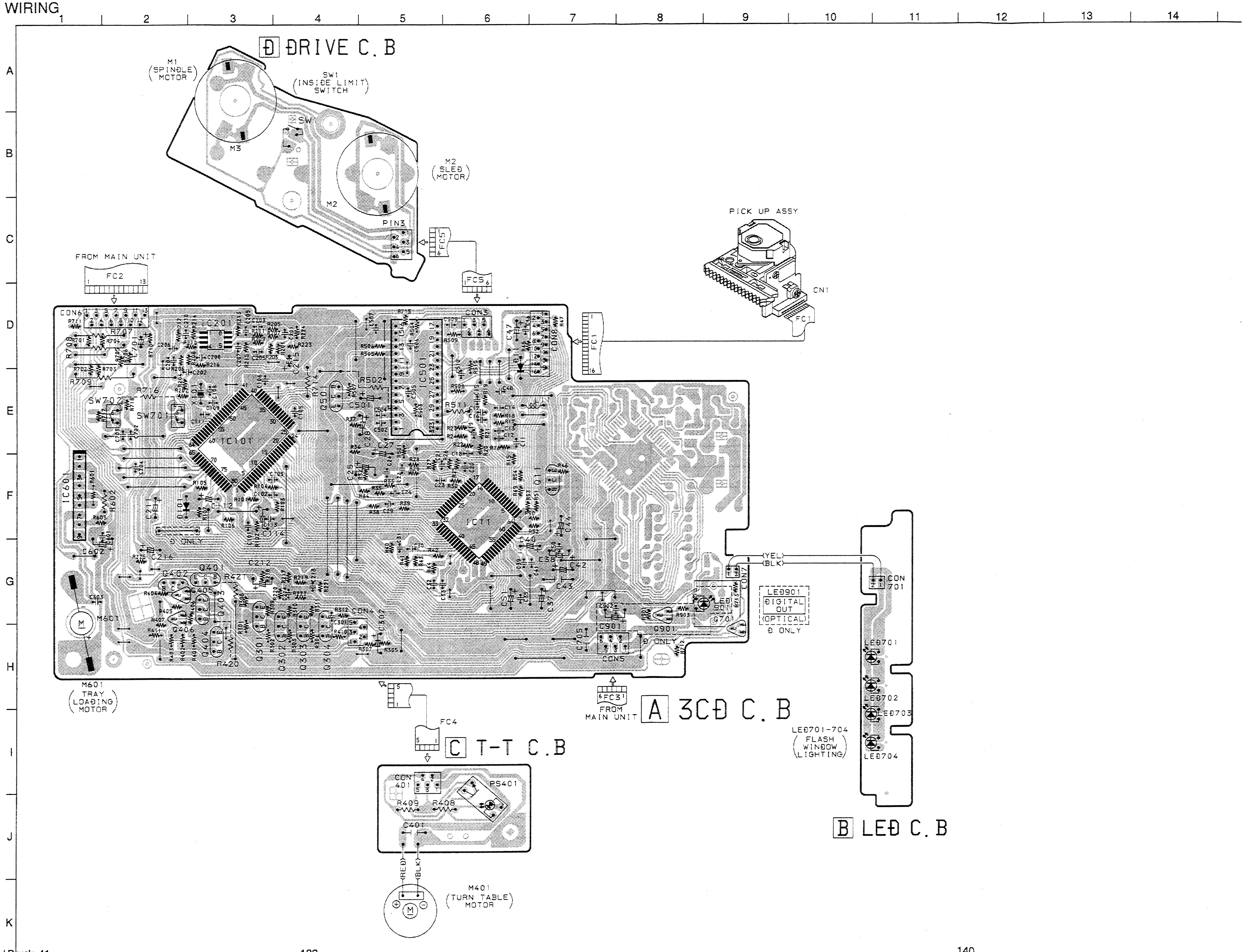


A 3CD C.B
IC11 LA9230M RF SIGNAL SERVO PROCESSOR
IC101 LC78630E DIGITAL SIG PROCESSOR
IC501 TRACKING, FOCUS COIL/SPINDLE SLED MOTOR DRIVER
Q301-304 +8V REG
Q401-406 TURN TABLE MOTOR DRIVER
<+2.5V>
<+5V>
<8 GND>
<+8.4V>
CON8
CON3
CON4
CON401
PICK UP ASSY KSS-213B
PD IC
LD
FOCUS COIL
TRACKING COIL
CD MECHANISM 3ZG-2 C2N
M1
M2
SW1
(SPINDLE MOTOR)
(SLED MOTOR)
(INSIDE LIMIT SW)
D DRIVE C.B
M401
PS401 GP1S53V
TURN TABLE MOTOR
C T-T C.B
OPEN UP SW VOLT.

SCHEMATIC DIAGRAM


IC11 LA9230M RF SIGNAL SERVO PROCESSOR
IC101 LC78630E DIGITAL SIGNAL PROCESSOR
X101 16.9344 MHz
IC501 TRACKING, FOCUS COIL/SPINDLE SLED MOTOR DRIVER
IC501 BA6897S
Q501 2SA1318TU REG.
Q301-304 +8V REG
IC601 TA7291S TRAY MOTOR DRIVER
M601 (TRAY MOTOR)
Q401-406 TURN TABLE MOTOR DRIVER
DISH FWD
DISH RVS
Q901 2SC2712GR DRIVER
LED901 DIGITAL OUT (OPTICAL)
D ONLY
CON6
O-CL (CD)
O-CDCE
O-DATA (CD)
I-WRQ
O-CDLED
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
FROM MAIN UNIT
CON5
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
CD:10V OTHERS:0V
IC201 (1/2) EQ NJM4558MD AMP
IC201 (2/2) NJM4558MD EQ AMP
RCH
LCH
SW701 (UP SW)
SW702 (OPEN SW)
OPEN SW | OFF | ON
UP SW | OFF ON | OFF/ON
VOLTAGE | 5.5V 2.8V | 0V
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
LED702 LED704 LED701 LED703
AMBER GRN GRN AMBER
LED 701,704 SLP636C -81-S-T1
LED 702,703 SEL1550CM
B LED C.B
CON7 ASSY 2P
CON701
A 3CD C.B
CON8
CON3
CON4
CON401
PS401 GP1S53V
M401
TURN TABLE MOTOR
C T-T C.B
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D DRIVE C.B
PD IC
LD
FOCUS COIL
TRACKING COIL
PICK UP ASSY KSS-213B
CD MECHANISM 3ZG-2 C2N
Q11 2SA933S (RS) APC
L11 10mH
+5V
+2.5V
+8.4V
+12V
D GND
A-GND

WIRING


1
2
3
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6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
Đ ĐRIVE C.B
M1 (SPINĐLE MOTOR)
SW1 (INSIĐE LIMIT SWITCH)
SW1
M3
M2 (SLEĐ MOTOR)
M2
PIN3
FC5
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON3
CON8
IC201
IC101
IC501
IC11
IC601
SW702
SW701
Q501
Q11
Đ ONLY
Q401
Q402
Q405
Q406
Q404
Q301
Q302
Q303
Q304
CON4
CON5
CON7
C901
Q901
Q701
LEĐ901 ĐIGITAL OUT (OPTICAL)
Đ ONLY
(YEL)
(BLK)
CON 701
LEĐ701
LEĐ702
LEĐ703
LEĐ704
LEĐ701-704 (FLASH WINĐOW LIGHTING)
B LEĐ C.B
M601
M601 (TRAY LOAĐING MOTOR)
FC3
FROM MAIN UNIT
A 3CĐ C.B
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(REĐ)
(BLK)
M401 (TURN TABLE MOTOR)

IC DESCRIPTION

IC, LC78630E

Pin No.	Pin Name	I/O	Description
1	VPDO	O	Vari-pitch PLL charge pump output pin. This pin must be open when not used.
2	PDO2	O	Bit clock playback PLL charge pump output pin during 2 times and 4 times speed. This pin must be open when not used.
3	PDO1	O	Bit clock playback PLL charge pump output pin during normal speed.
4	AVSS	—	Analog system GND. Normally 0V.
5	FR	I	An external resistor to set built-in VCO frequency range is connected to this pin.
6	AVDD	—	Analog system GND.
7	ISET	I	An external resistor set PD01 and PD02 output current is connected to this pin.
8	TAI	I	Test input pin with built-in pull-down resistor.
9	EFMO	O	EFM signal output pin.
10	VSS	—	Digital system GND. Normally 0V.
11	EFMI	I	EFM signal input pin.
12	TEST1	I	Test input pin with built-in pull-down resistor.
13	CLV+	O	Spindle servo control output pin. Acceleration when CLV+ is "H".
14	CLV-	O	Deceleration when CLV- is "H".
15	V/$\overline{P}$	O	Rough servo/phase control automatic selection monitoring output pin. Rough servo at "H". Phase control mode at "L".
16, 17	TEST2, TEST3	I	Test input pin with built-in pull-down resistor.
18	P4	I/O	Input/output port.
19	HFL	I	Tracking detection signal input pin. Schmitt input.
20	TES	I	Tracking error signal input pin. Schmitt input.
21	PCK	O	EFM data playback bit clock monitoring pin. 4.3218 MHz when phase is locked during normal speed playback.
22	FSEQ	O	Sync signal detection output pin. When the sync signal detected from the EFM signal agrees with the internally generated sync signal, "H" output.
23	TOFF	O	Tracking OFF output pin.
24	TGL	O	Tracking gain selector output pin. Gain is increased at "L".
25	THLD	O	Tracking hold output pin.
26	TEST4	I	Test input pin with built-in pull-down resistor.
27	VDD	—	Digital system GND.
28, 29	JP+, JP-	O	Tracking jump output pin. JP+ "H" occurs at acceleration during jump toward outside or decelerator toward inside. JP- "H" occurs at acceleration during jump toward inside or deceleration toward outside.
30, 31	SLD+, SLD-	O	Sled output pin. Four different level can be set using commands.
32	EMPH	O	Emphasis monitoring output. "H" indicates that emphasis disc is being played back.
33	P5	I/O	Input/output.
34	LRCKO	O	Digital filter output. LR clock output pin.
35	DFLRO	O	Digital filter output. LR data output pin. DF is turned OFF with the DFOFF command.
36	DACKO	O	Digital filter output. Bit clock output pin.
37	CONT1	O	Output port.
38	P0/DFCK	I/O	Input/output port. The DF bit clock input pin during the anti-shock mode.
39	P1/DFIN	I/O	Input/output port. The DF data input pin during the anti-shock mode.
40	P2	I/O	Input/output port. Deemphasis filter ON/OFF selection input pin during the anti-shock mode. Deemphasis filter ON at "H".
41	P3/DFLR	I/O	Input/output port. The DF LR clock input pin during the anti-shock mode.
42	LRSY	O	For ROMXA • LR clock output pin.
43	CK2	O	For ROMXA • Bit clock output pin. Polarity inversion by the CK2CON command.
44	ROMXA	O	For ROMXA • Interpolation data output pin. The un-interpolated data is output with the ROMXA command.
45	C2F	O	For ROMXA • C2 flat output pin.
46	MUTEL	O	For 1-bit DAC • L-channel mute output pin.
47	LVDD	—	For 1-bit DAC • L-channel power supply.
48	LCHP	O	For 1-bit DAC • L-channel P output pin.
49	LCHN	O	For 1-bit DAC • L-channel N output pin.
50	LVSS	—	For 1-bit DAC • L-channel GND. Normally 0 V.
51	XVSS	—	Crystal oscillator GND. Normally 0 V.
52	XOUT	O	An external 16.9344 MHz crystal oscillator is connected to this pin.
53	XIN	I	33.8688 MHz crystal oscillator is connected during 4 time speed playback.
54	XVDD	—	Crystal oscillator GND.
55	RVSS	—	For 1-bit DAC • R-channel GND. Normally 0 V.
56	RCHN	O	For 1-bit DAC • R-channel N output pin.
57	RCHP	O	For 1-bit DAC • R-channel P output pin.
58	RVDD	—	For 1-bit DAC • R-channel power supply.
59	MUTER	O	For 1-bit DAC • R-channel mute output pin.
60	SBSY	O	Subcode block sync signal output pin.
61	EFLG	O	C1 and C2 error correction monitoring pin.
62	PW	O	ubcode P, Q, R, S, T, U, V and W output pin.
63	SFSY	O	Subcode frame sync signal output pin. The level falls down when the subcode is in standby.
64	SBCK	I	Subcode read clock input pin. Schmitt input. This pin must be connected GND when not used.
65	DOUT	O	Digital output pin.
66	FSX	O	7.35 kHz sync signal divided from the crystal oscillator is output to this pin.
67	WRQ	O	Subcode Q output standby output pin.
68	RWC	I	Read/write control input pin.
69	SQOUT	O	Subcode Q output pin.
70	COIN	I	Microprocessor command input pin.
71	$\overline{CQCK}$	I	Command input read clock or subcode read clock input from SQOUT. Schmitt input.
72	$\overline{RES}$	I	Chip reset input pin. This pin goes to "L" once when the main power is turned on.
73	TESTF	O	Test output pin.
74	CONT2	O	Output port.

Pin No.	Pin Name	I/O	Description
75	16M	O	16.9344 MHz crystal output pin. 33.8688 MHz is output during 4 times speed playback.
76	4.2M	O	4.2336 MHz output pin.
77	TEST5	I	Test input pin with built-in pull-down resistor.
78	$\overline{\text{CS}}$	I	Chip select input pin with built-in pull-down resistor.
79	DEFI	I	Defect detection signal input pin. This pin must be connected GND when not used.
80	VCOC	I	Vari-pitch VCO control input pin. This pin must be connected GND when not used.

IC, LA9230M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Photo diode of pickup is connected to this pin. This signal is added to the FIN1 pin signal to produce the RF signal and subtracted to produce the FE signal.
2	FIN1	I	Photo diode of pickup is connected to this pin.
3	E	I	Photo diode of pickup is connected to this pin. This signal is subtracted from the F pin signal to produce the FE signal.
4	F	I	Photo diode of pickup is connected to this pin.
5	TB	I	DC component of the TE signal is input to this pin.
6	TE-	I	The TE signal gain adjustment resistor is connected between this pin and the TE pin.
7	TE	O	The TE signal output pin.
8	TESI	I	TES (Track Error Sense) comparator input pin. The TE signal is input after passing through band-pass filter.
9	SCI	I	Shock sense input signal is connected to this pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD-	I	An external tracking phase compensation constant is connected between the TD and VR pins.
13	TD	I	An external tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD-	I	A focusing phase compensation constant is connected between the FD and FA pins.
18	FA	I	A focusing phase compensation constant is connected between the FD- and FA- pins.
19	FA-	I	A focusing phase compensation constant is connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE-	I	An external FE signal gain setting resistor is connected between the TE and this pins.
22	AGND	—	Analog signal GND.
23	SP	O	Single-ended output of the CV+ and CV- pin input signal.
24	SPI	I	Spindle amplifier input.
25	SPG	I	An external spindle gain in 12 cm mode setting resistor is connected to this pin.
26	SP-	I	An external spindle phase compensation constant together with the SPD pin, is connected to this pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Sled phase compensation constant is connected to this pin.
29	SLD	O	Sled control signal output pin.
30, 31	SL-, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP-, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input pin from DSP. Gain low when TGL = "H".
35	TOFF	I	Tracking off control signal input pin from DSP. Tracking off when TGL = "H".
36	TES	O	The TES signal is output from this pin to DSP.
37	HFL	I	The (HIGH FREQUENCY LEVEL) is used to judge whether the main beam is positioned above the bits or mirror.

Pin No.	Pin Name	I/O	Description
38	SLOF	I	Sled servo off control input pin.
39, 40	CV-, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS-	I	RF gain setting and 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	The (SLICE LEVEL CONTROL) is the signal which control the data slice level of the RF waveform with DSP. The (SLICE LEVEL CONTROL) is from this pin.
44	SLI	I	The input signal which controls the data slice level with DSP, is connected to this pin.
45	DGND	—	Digital system GND.
46	NC [FSC]	—	No connection. (Output pin for focus search smoothing capacity.)
47, 48	NC	—	No connection.
49	DEF	O	Disc defect detection output pin.
50	CLK	I	Reference clock input pin. The DSP 4.23 MHz is input to this pin.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	(DETECT RF) RF level detection output.
55	NC	—	No connection.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	I	A bypass capacitor for reference voltage is connected to this pin.
58	VR	O	Reference voltage output pin.
59	LF2	I	An external disc defect detection constant is connected to this pin.
60	PH1	I	An external RF signal peak holding capacitor is connected to this pin.
61	BH1	I	An external RF signal bottom holding capacitor is connected to this pin.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button) • Press the power switch button. • Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

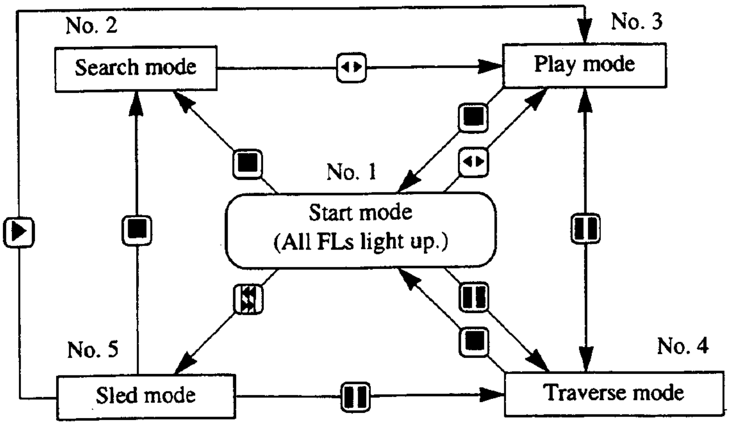
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • CD block power is ON.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD11	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check DRF
Traverse mode No.4	❚❚ key	CD11	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

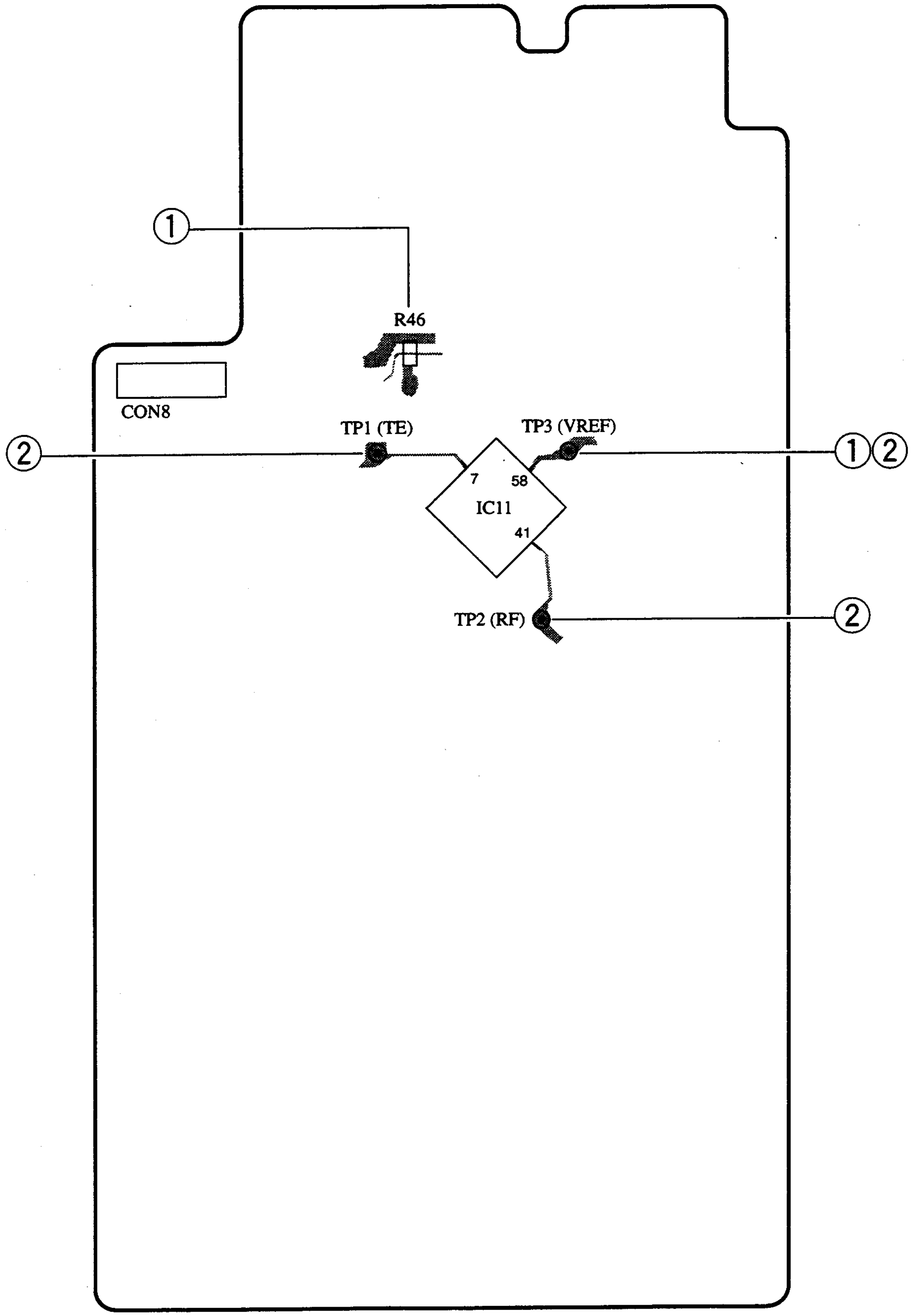
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



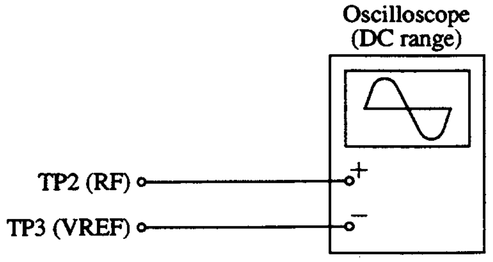
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

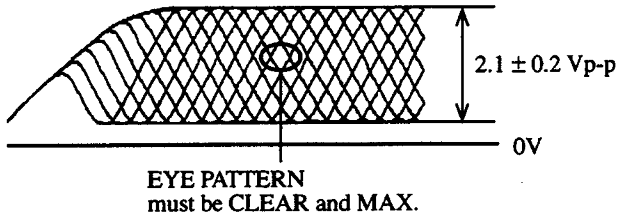

①
R46
CON8
②
TP1 (TE)
TP3 (VREF)
①②
7
58
IC11
41
TP2 (RF)
②

Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. RF waveform Check


Oscilloscope
(DC range)
TP2 (RF)
TP3 (VREF)
+
−

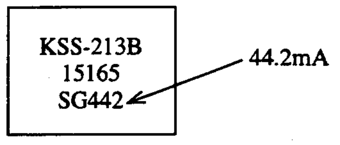
1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Confirm that the waveform at oscilloscope has amplitude of 2.1 Vp-p, and clear wedge area in its center.



EYE PATTERN
must be CLEAR and MAX.

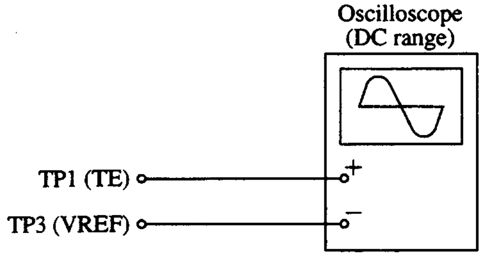
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

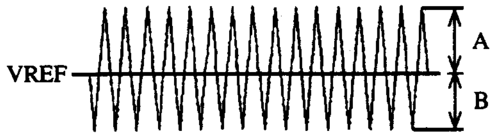

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check


Oscilloscope
(DC range)
TP1 (TE)
TP3 (VREF)
+
−

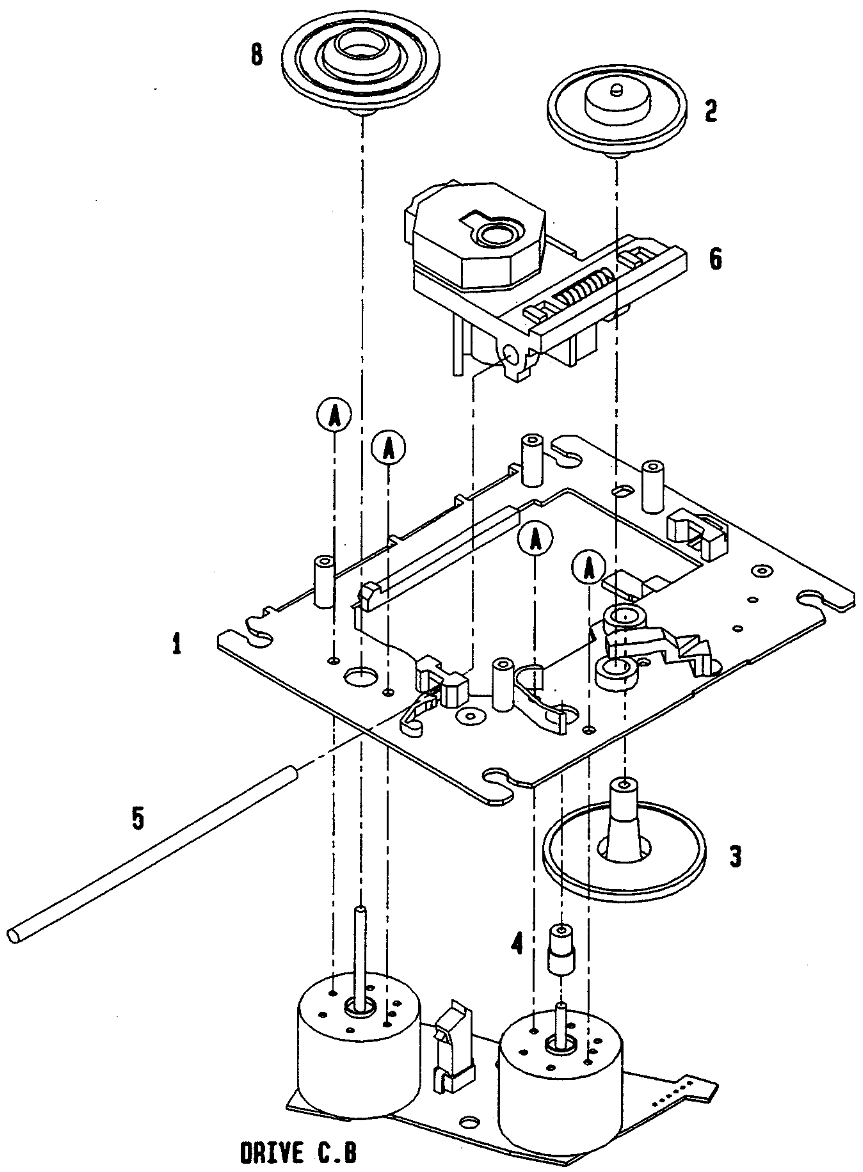
1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782(YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



A=B

VOLT/DIV: 20mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C2N <Z>)



CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C2N <Z>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF.NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S
2	83-ZG2-204-419		GEAR,A
3	83-ZG2-205-219		GEAR,B
4	83-ZG2-220-01K		GEAR MOTOR 2
5	83-ZG2-207-119		SHAFT,SLIDE
6	87-070-445-010		PICK-UP,KSS-213B
8	83-ZG2-233-019		TURN TABLE,A5
A	87-261-032-219		SCREW V+2-3

USE MODEL LIST

CX-NAV70 (NSX-AV70)
CX-NAV700 (NSX-AV700)
CX-NAV71 (NSX-AV71)
CX-NAV80 (NSX-AV80)
CX-NAV800 (NSX-AV800)
CX-NAV90 (NSX-AV90)
CX-NAV900 (NSX-AV900)
CX-NK300 (NSX-K300)
CX-NK700 (NSX-K700)
CX-NK77 (NSX-K77)
CX-NK80 (NSX-K80)
CX-NK90 (NSX-K90)
CX-NV300 (NSX-V300)
CX-NV3000 (NSX-V3000)
CX-NV3001 (NSX-V3001)
CX-NV390 (NSX-V390)
CX-NV500 (NSX-V500)
CX-NV700 (NSX-V700)
CX-NV705 (NSX-V705)
CX-NV710 (NSX-V710)
CX-NV715 (NSX-V715)
CX-NV720 (NSX-V720)
CX-NV770 (NSX-V770)
CX-NV800 (NSX-V800)
CX-NV8000 (NSX-V8000)
CX-NV8080 (NSX-V8080)
CX-NV820 (NSX-V820)
CX-NV900 (NSX-V900)
CX-NV9000 (NSX-V9000)
CX-NV9090 (NSX-V9090)
CX-NV915 (NSX-V915)
CX-NV929 (NSX-V929)
FD-NAKH8 (NSX-AKH8)
FD-NH8 (NSX-AVH8)
FD-NH8 (NSX-AVH8)
FD-NH80 (NSX-AVH80)
FD-NH9 (NSX-AVH9)
FD-NH9 (NSX-AVH9)
FD-NH90 (NSX-AVH90)
FD-SNAKH8 (NSX-AKH8)
FD-SNH9 (NSX-AVH9)

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART